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BETTER FRUIT

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J. B. PILKINGTON, NURSERYMAN,
PORTLAND, OREGON

President of the National Nurserymen's Association for 1913-1914.

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

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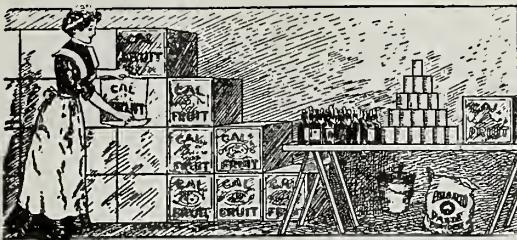
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Northwest Fruit Growers' Unions and Associations

We publish free in this column the name of any fruit growers' organization. Secretaries are requested to furnish particulars for publication.

Oregon

Albany Fruit Growers' Union, Albany.
Asblond Fruit and Produce Association, Asblond.
Benton County Fruit Growers' Association, Corvallis.
Brownsville Fruit and Produce Association, Brownsville.
Butte Falls Fruit Growers' Association, Freewater.
Coos Bay Fruit Growers' Association, Marshfield.
Coquille Valley Fruit Growers' Union, Myrtle Point.
Cove Fruit Growers' Association, Cove.
Dallas Fruit Growers' Association, Dallas.
Douglas County Fruit Growers' Association, Roseburg.
Dufur Valley Fruit Growers' Union, Dufur.
Dundee Fruit Growers' Association, Dundee.
Dundee Co-operative Fruit Growers and Packers, Dundee.
Estacada Fruit Growers' Association, Estacada.
Eugene Fruit Growers' Association, Eugene.
Apple Growers' Association, Hood River.
Hyland Fruit Growers of Yamhill County, Sheridan.
Imbler Fruit Growers' Union, Imbler.
La Grande Fruit Association, La Grande.
Lincoln County Fruit Growers' Union, Toledo.
McMinnville Fruit Growers' Association, McMinnville.
Milton Fruit Growers' Union, Milton.
Mosier Fruit Growers' Association, Mosier.
Mount Hood Fruit Growers' Association, Sandy.
Newburg Apple Growers' Association, Newburg.
Northwestern Fruit Exchange, 418 Spalding Bldg., Portland.
Northeast Gaston Farmers' Association, Forest Grove.
Oregon City Fruit and Produce Association, Oregon City.
Riddle Fruit Growers' Association, Riddle.
Rogue River Fruit and Produce Association, Medford.
Salem Fruit, Union, Salem.
Santiam Fruit Growers' Association, Lebanon.
Siuslaw Fruit Growers' Association, Florence.
Springbrook Fruit Growers' Union, Springbrook.
Stanfield Fruit Growers' Association, Stanfield.
Sutherlin Fruit Growers' Association, Sutherlin.
The Dalles Fruit Growers' Union, The Dalles.
Umpqua Valley Fruit Growers' Association, Roseburg.
Washington County Fruit Growers' Association, Hillsboro.
Willamette Valley Prune Association, Salem.
Yankton Fruit Growers' Association, Yankton.

Washington

Apple Growers' Union of White Salmon, Underwood.
Bay Island Fruit Growers' Association, Tacoma.
Brewster Fruit Growers' Union, Brewster.
Buckley Fruit Growers' Association, Buckley.
Cashmere Fruit Growers' Union, Cashmere.
Clarkston Fruit Growers' Association, Clarkston.
Cowichan Fruit and Produce Association, Kelso.
Dryden Fruit Growers' Union, Dryden.
Elma Fruit and Produce Association, Elma.
Felida Prune Growers' Association, Vancouver.
Garfield Fruit Growers' Union, Garfield.
Goldendale Fruit and Produce Association, Goldendale.
Grandview Fruit Growers' Association, Grandview.
Granger Fruit Growers' Association, Granger.
Kalama Fruit Growers' Association, Kalama.
Kennewick Fruit Growers' Association, Kennewick.
Kiona Fruit Growers' Union, Kiona.
Lake Chelan Fruit Growers' Association, Chelan.
Lewis County Fruit Growers' Association, Centralia.
Lewis River Fruit Growers' Union, Woodland.
Mason County Fruit Growers' Association, Shelton.
Mount Vernon Fruit Growers' Association, Mount Vernon.
Northwestern Fruit Exchange, 510 Chamber of Commerce Building, Spokane.
Peshastin Fruit Growers' Association, Peshastin.
Pullman Fruit Growers' Association, Pullman.
Puyallup and Sumner Fruit Growers' Association, Puyallup.
Spokane County Horticultural Society, Spokane.

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Spokane District Fruit Growers' Association, Spokane.
Spokane Inland Fruit Growers' Association, Keisling.
Spokane Valley Fruit Growers Co., Otis Orchards.
Spokane Valley Growers' Union, Spokane.
Southwest Washington Fruit Growers' Association, Chehalis.
Stevens County Fruit Growers' Union, Myers Falls.
The Green Bluff Fruit Growers' Association, Mead.
The Ridgefield Fruit Growers' Association, Ridgefield.
The Touchet Valley Fruit and Produce Union, Dayton.
Thurston County Fruit Growers' Union, Tumwater.
Vashon Fruit Union, Vashon.
Walla Walla Fruit and Vegetable Union, Walla Walla.
Wenatchee District Fruit Growers' Union, Wenatchee.
Wenatchee Valley Fruit Growers' Association, Wenatchee.
White River Valley Fruit and Berry Growers' Assn., Kent.
White Salmon Fruit Growers' Union, White Salmon.
Yakima Valley Fruit Growers' Association, North Yakima.
Yakima Valley Fruit and Produce Growers' Assn., Granger.
Yakima County Horticultural Union, North Yakima.
Zillah Fruit Growers' Association, Toppenish.

Idaho

Boise Valley Fruit Growers' Association, Boise.
Caldwell Fruit Growers' Association, Caldwell.
Council Valley Fruit Growers' Association, Council.
Emmett Fruit Growers' Association, Emmett.
Fruit Growers' Association, Moscow.
Lewiston Orchards Assembly, Lewiston.
Lewiston Orchards Association, Lewiston.
Nampa Fruit Growers' Association, Nampa.
New Plymouth Fruit Growers' Association, New Plymouth.
Parma-Roswell Fruit Growers' Association, Parma.
Payette Valley Apple Growers' Union, Payette.
Twin Falls Fruit Growers' Association, Twin Falls.
Weiser Fruit and Produce Growers' Association, Weiser.
Weiser River Fruit Growers' Association, Weiser.

Colorado

Boulder County Fruit Growers' Association, Boulder.
Capital Hill Melon Growers' Association, Rocky Ford.
Crawford Fruit Growers' Association, Crawford.
Delta County Fruit Growers' Association, Delta.
Denver Fruit and Vegetable Association, Denver.
Fair Mount Melon Growers' Association, Swink.
Fowler Melon Growers' Association, Fowler.
Fremont County Fruit Growers' Association, Canon City.
Granada Melon Growers' Association, Granada.
Grand Junction Fruit Growers' Association, Clifton, Palisade, Grand Junction.
Koun's Party Cantaloupe Growers' Association, Rocky Ford.
Lamar Melon Growers' Association, Lamar.
Longmont Produce Exchange, Longmont.
Loveland Fruit Growers' Association, Loveland.
Manzanola Fruit Association, Manzanola.
Manzanola Orchard Association, Manzanola.
Montrose Fruit and Produce Association, Montrose.
Nevalde Melon Growers' Association, Swink.
Palisade Fruit Growers' Association, Palisade.
Paonia Fruit Exchange, Paonia.
Pent County Melon Growers' Association, Las Animas.
Produce Association, Debeque.
Rifle Fruit and Produce Association, Rifle.
Roaring Fork Potato Growers' Association, Carbondale.
Rocky Ford Melon Growers' Association, Rocky Ford.
San Juan Fruit and Produce Growers' Assn., Durango.
The Producers' Association, Debeque.
Western Slope Fruit Growers' Association, Palisade.

Montana

Como Fruit Growers' Association, Como.
Hamilton Fruit Association, Hamilton.
Woodside Fruit Growers' Association, Woodside.
Victor Fruit Growers' Association, Victor.
Stevensville Fruit Growers' Association of the Bitter Root Valley, Stevensville.
Missoula Fruit and Produce Association, Missoula.

Utah

Bear River Valley Fruit Growers' Assn., Bear River City.
Brigham City Fruit Growers' Association, Brigham City.
Cache Valley Fruit Growers' Association, Wellsville.
Centerville Fruit Growers' Association, Centerville.
Excelsior Fruit and Produce Association, Clearfield (post-office Layton R. F. D.).
Farmers and Fruit Growers' Forwarding Assn., Centerville.
Green River Fruit Growers' Association, Green River.
Ogden Fruit Growers' Association, Ogden.
Springville Fruit Growers' Association, Springville.
Utah County Fruit and Produce Association, Provo.
Willard Fruit Growers' Association, Willard.

California

California Farmers' Union, Fresno.
California Fruit Exchange, Sacramento.
Fresno Fruit Growers' Company, Fresno.
Lincoln Fruit Growers' Association, Lincoln.
Lodi Fruit Growers' Union, Lodi.
Loomis Fruit Growers' Association, Loomis.
Newcastle Fruit Growers' Association, Newcastle.
Penryn Fruit Growers' Association, Penryn.
Sebastopol Apple Growers' Union, Sebastopol.
Sebastopol Berry Growers' Union, Sebastopol.
Stanislaus Farmers' Union, Modesto.
The Supply Company of the California Fruit Growers' Association, Los Angeles.
Turlock Fruit Growers' Association, Turlock.
Vacaville Fruit Growers' Association, Vacaville.
Winters Fruit Growers' Association, Winters.

New Mexico

San Juan Fruit and Produce Association, Farmington.

British Columbia

Armstrong Fruit Growers' Association, Armstrong.
Boswell-Kootenay Lake Union, Boswell.
British Columbia Fruit Growers' Association, Victoria.
Creston Fruit and Produce Exchange, Creston.
Grand Forks Fruit Growers' Association, Grand Forks.
Hammond Fruit Association, Ltd., Hammond.
Hatzic Fruit Growers' Association, Hatzic.
Kaslo Horticultural Association, Kaslo.
Kelowna Farmers' Exchange, Ltd., Kelowna.
Kootenay Fruit Growers' Union, Ltd., Nelson.
Mission Fruit Growers' Association, Mission.
Okanagan Fruit Union, Ltd., Vernon.
Queens Bay Fruit Growers' Association, Queens Bay.
Salmon Arm Farmers' Exchange, Salmon Arm.
Summerland Fruit Growers' Association, Summerland.
Victoria Fruit Growers' Exchange, Victoria.
Western Fruit Growers' Association, Mission.

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This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

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Yours truly,
(Signed) J. E. RUNDLE.

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Gentlemen—We have used one of your fruit sorting machines this season to pack about twenty thousand boxes of apples, and we are well pleased with them. We are positive that the machine does not bruise the fruit. We find by using this machine that we can use unskilled packers, thereby solving the packing question. We are also able to get the apples packed for less per box, as the packer is able to pack from a third to a half more with the aid of the machine. You surely have the apple sorting solved. Of all the people that looked at our machine work there wasn't a single person but what pronounced it a success. We remain yours very truly,

(Signed) LEEDY BROS.
Per C. A. Leedy.

Spokane, Washington, November 29, 1912.

We have given your fruit sorting machine a fair trial this season and the apparatus has given us not the slightest trouble, and has handled our apples perfectly with no bruising. Packers were very hard to get early in the season, but with your machine we were able to put up an excellent pack with wholly inexperienced help. Yours truly,

LOUIS A. DYER, Secretary,
Spokane Highlands Fruit Growers' Union.

Wenatchee, Washington, January 10, 1913.

Dear Sirs—The fruit sorting machine which we bought of you was put in use during the latter part of our packing season, and we are glad to state that it gave excellent satisfaction during the time it was in use. We are entirely satisfied with its operation and can safely say that it materially reduced the cost of handling fruit. We are only sorry that we did not have it during the entire packing season.

Yours very truly,
(Signed) THE CLARK COMPANY.
Per Earl W. Van Tassell.

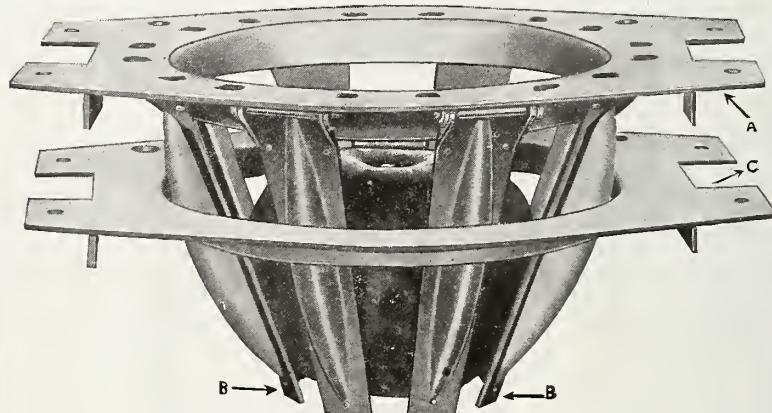
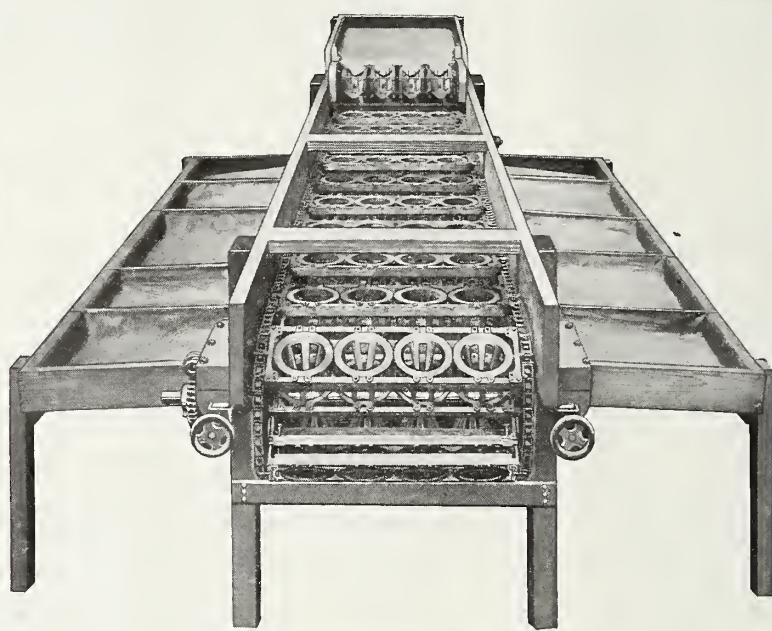
Wenatchee, Washington, November 22, 1912.

Gentlemen—I wish to state that I purchased one of your fruit sorting machines of your Mr. Schellenger October 10, 1912. I handled about 7,000 boxes of apples through the machine. It has added much to the convenience of handling the crop, as anyone can pack just as good as an expert can. My apples were delivered to the Wenatchee Valley Fruit Growers' Association and were subjected to a very rigid inspection, and can say that they were all received without a single complaint. I think it will pay every commercial grower of apples to own a machine.

Yours truly,
(Signed) HARRY SHOTWELL.

Our New Model C machine will sort apples, peaches, pears, tomatoes, etc., etc., into any desired number of sizes, ranging from $1\frac{1}{4}$ inches to $4\frac{3}{4}$ inches cheek-to-cheek diameter. Changes in the sizes can be made instantly and accurately to the one-hundredth part of an inch.

Write today for our catalogue; It describes our new machine fully and also contains new and valuable information regarding the sorting of fruit which should be carefully read by every grower before packing season begins.



One of the 88 gauges which are in each machine.

Schellenger Fruit Sorting Machine Co.
609-611 South Paulina Street, CHICAGO, ILLINOIS

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Joint Convention of Nurserymen's Associations

By E. H. Shepard, Editor "Better Fruit"

EVERY nurseryman in the United States knows Mr. J. B. Pilkington. Through the untiring efforts of Mr. Pilkington the National Nurserymen's convention was secured for Portland in the year 1913. In connection with this arrangements were made with the Pacific Coast Nurserymen's convention for a joint meeting. This was the first time that a joint meeting was ever held in connection with the National Nurserymen's convention. About 100 Eastern nurserymen, many of them accompanied by their wives and sometimes families, and about 300 Pacific Coast nurserymen, many of them accompanied by their wives, gathered together in Portland June 17 to 21, with headquarters at the Multnomah Hotel, to discuss the various problems of interest to the nursery business. This was one of the greatest nurserymen's conventions ever held anywhere. The Multnomah Hotel, one of the most magnificent hotels of the Pacific Coast, made an ideal place for the convention, with a splendid lobby and a large hall for the meetings. The Eastern delegates came by a special train, getting a touch of Western hospitality when they reached Billings, Montana, where they were supplied on board the train, by the Milton Nursery, with a number of ten-pound boxes of our famous cherries, the Bing, Lambert, Republican and Royal Ann. The Bing, Lambert and Republican, three of the best varieties of cherries grown in the world, originated in Oregon. The Lambert is named after Mr. Lambert, the originator. The Bing is named after a Chinaman, who had faithfully served his master in the nursery and orchard for some thirty or forty years. Our Eastern nurserymen were surprised at the size of the Bing and Lambert, which are about the size of a quarter-dollar piece. When the delegation reached Toppenish they were met by the staff of the Washington Nursery and many prominent citizens, who entertained them in regal style. They were taken for a ride through the principal part of Yakima Valley, from Toppenish to Yakima, where they took their special train for Seattle. An account of their entertainment by the Washington Nursery is given elsewhere in this edition.

The party arrived in Portland on the 17th of June and found the lobby, the convention hall and the exhibition room beautifully decorated with blue-bells, lilies, roses and all other varieties of flowers which were in bloom at that date. Portland is celebrated for its magnificent roses. It is universally conceded that Portland produces the

finest roses in the greatest quantity grown anywhere in the world. Every resident in Portland has a yard of roses. All along the sidewalks of the residence streets on the outer side of the walk, planted like a hedge, is a continuous string of roses on both sides of the street: It is the only city in the world where every citizen has united to make the city beautiful by planting roses to form hedges along the sidewalks. In the residential district the streets are lined with magnificent elms and maples, which, in the splendid climate and rich

delegation was taken through the residential and business districts of Portland. The Eastern delegates were astonished at the magnificent steel structure buildings, many of which are ten to eighteen stories in height, and were more than pleased and delighted with the beautiful residential districts, the magnificent homes and the beautiful flower gardens. Mr. J. B. Pilkington, Mr. Guy Pilkington, Mr. McDonald, Mr. C. J. Atwood and others were always in evidence, looking after every want and wish of every delegate.

The Oregon Nursery chartered a special train, taking the entire delegation with their wives and friends as their guests to the Oregon Nursery, located at Orenco, about eighteen miles west of Portland. This is one of the largest nurseries in the United States, the entire plant consisting of about 1,200 acres. All varieties of fruits, plants and shrubbery are grown in large blocks. At one o'clock a delicious luncheon was served in their immense packing house, which consisted of many courses and was equal to any of the best banquets. The Orenco orchestra entertained the guests with choice musical selections during lunch, and afterward short talks upon various subjects in reference to the Northwest were made by about fifty people prominently connected with the nursery and orchard business. At four o'clock in the afternoon the Oregon Nursery Company lined up all of its teams and wagons that are used on the farm and took the entire delegation, consisting of between four and five hundred people, for a ride over its magnificent property.

The meetings in the convention hall, morning and afternoon, were of more than usual interest and value to the nursery industry. The regular business of the convention was handled with dispatch. Mr. Meehan of the Meehan Nursery was president and presided in a businesslike way, according to true parliamentary law. Mr. J. B. Pilkington of Portland, Oregon, was elected president, and Mr. John Hall of Rochester, New York, was elected secretary of the National Nurserymen's Association. The president and secretary elected by the Pacific Coast Nurserymen's Association were Mr. R. Layritz of Victoria, B. C., and Mr. C. A. Tonneson of Tacoma, Washington, respectively. While many features of interest to the nurserymen were discussed and many problems settled, the most important piece of business was the work in reference to horticultural laws. This subject was ably handled by Mr. George C. Roeding of the

Features of this Issue

JOINT CONVENTION OF NURSERYMEN
AT PORTLAND
REPORT ON EXTENSIVE FRUIT MARKETING INVESTIGATIONS
THE FOOD OF AN APPLE TREE
PROPER METHOD OF PACKING PRUNES
HORTICULTURAL LAWS
STANDARD INSPECTION OF NURSERIES
THE HORTICULTURE OF TOMORROW
NORTHWEST PRUNE GROWERS' MEETING
FALL FAIRS OF NINETEEN-THIRTEEN

soil, in a few years have grown so rapidly that they now equal in size the famous elms of New England; in many instances the branches extend across the street in the form of an arch.

The exhibition hall was filled with displays both interesting and elegant, with fruits from the entire Pacific Coast, consisting of oranges, lemons, dried figs, raisins, etc., for which California is famous. California is the greatest citrus fruit country of the entire United States and produces about 50,000 cars of oranges annually. The Oregonians, Washingtonians and Idahoians made an exhibit of apples, cherries, strawberries, evaporated prunes and flowers. The editor of "Better Fruit" and Mr. H. S. Galligan put ten boxes of the famous Yellow Newtown apples in cold storage and presented them to the nurserymen's convention. These were harvested in October and were in perfect condition, as good when they were taken out of storage as when they went in. The Apple Association of Hood River presented several crates of strawberries, which were served at the banquet on the steamer excursion up the Columbia River. Automobiles were provided and the entire



Members of the National Nurserymen's Association and the Pacific Coast Nurserymen's Association on the beautiful grounds in front of the office building of the Oregon Nursery at Orenco, Oregon. The Oregon Nursery Company had a special train chartered to bring the nurserymen from Portland, entertaining the entire convention as their guests at a delicious luncheon given in their large packing house. The luncheon was beautifully served by pretty girls and the guests were entertained with music, and a number of talks were given, which were short but very interesting and instructive to our Eastern friends.

Fancher Creek Nurseries, Fresno, California; Mr. W. P. Stark of the Wm. P. Stark Nurseries, Stark City, Missouri, and Mr. A. J. Cook of Sacramento, California. Mr. Stark was unable to be present and his address was delivered by his son. The sentiment for better horticultural laws was unanimous. It was the universal expression of opinion and desire of the joint convention that steps be taken, and a committee was appointed to work out a plan for horticultural laws and inspection that would be satisfactory to every state in the Union, with a view to having each state adopt this set of laws and eventually making these laws national laws if possible. The work done along this line was the most important business of the entire meeting. It is to be hoped and it is believed that the committee will be successful in formulating a set of laws that will be acceptable to every state in the Union. If this can be done it certainly will do away with a great deal of confusion and discussion, the expense of inspection and at the same time protecting every fruitgrower in every state in the Union to the fullest possible extent.

The following program indicates the scope of the meeting without further comment. Some of the important papers are printed complete elsewhere in this edition. It is with sincere regret that we beg leave to state that our space would not permit publishing every one of the excellent and instructive addresses, including the discussions which were given and took place at this meeting. The program follows:

Tuesday, June 17—Pacific Coast Business Session: 9:30 a. m., Reception for members and visitors; 10:30 a. m., Announcements by the president; minutes of last meeting; reports of vice presidents. Reports of Committees: Transportation, J. B. Pilkington, Portland;

Membership, S. A. Miller, Milton, Oregon; Exhibits, J. A. Stewart, Christopher, Washington; Legislation.

Tuesday, 2 p. m.—Executive committee, M. McDonald, Orenco, Oregon; Secretary-Treasurer's report, C. A. Tonneson, Taewa; Report of Committee of Presidents, M. McDonald, Orenco, Oregon. Question box. Election.

Tuesday, 8 p. m.—Pacific Coast Protective Association.

Wednesday, June 18—Joint Session: 9 a. m., Music; Address of welcome, Governor West; address of welcome, Mayor Rushlight; response, for Pacific Coast Association, P. A. Dix; president's address, for American Association, Thomas Meehan; president's address, for Pacific Coast Association, Albert Brownell. "What Shall the Future of Horticulture Be?" By E. W. Kirkpatrick, Kinney, Texas. Discussion—George C. Roeding, Fresno; H. W. Kruekeberg, Los Angeles, California. (Subject to be selected), William P. Stark, Neosho, Missouri. (Subject to be selected), J. H. Dayton, Painesville, Ohio. Discussion—J. B. Morey, Dansville, New York; F. W. Watson, Topeka, Kansas. Question box—Conducted by Secretary John Hall.

Wednesday, 1:30 p. m.—Music. "The Traffic Manager." By E. S. Wele, Shenandoah, Iowa. Discussion—Henry B. Chase, Chase, Alabama; J. B. Pilkington, Portland, Oregon. "Park Making on the Pacific Coast." By E. F. Mische, superintendent of parks, Portland, Oregon. Discussion—J. Horace McFarland, Harrisburg, Pennsylvania; Harlan P. Kelsey, Salem, Massachusetts; D. A. MacRorie, San Francisco, California. "Care of Small Fruit Plants—Duty of Nurseryman and Planter." By L. J. Farmer, Pulaski, New York. Recess, 4 p. m.

Wednesday Evening—Local entertainment.

Thursday, June 19, 9 a. m.—Music. "Working and Results of the New Federal Horticultural Law." By J. McHutchison, New York. Discussion—D. S. Lake, Shenandoah, Iowa; John S. Armstrong, Ontario, California. "Horticultural Laws." By George C. Roeding, Fresno, California. Discussion—W. C. Reed, Vincennes, Indiana; Peter Youngers, Geneva, Nebraska; M. L. Dean, state horticulturist, Missoula, Montana. "Oregon's New Quarantine Law." Discussion—W. K. Newell, Gaston, Oregon; F. A. Wiggins, Toppenish, Washington; John Vallance, Oakland, California. Question box.

Thursday, 1:30 p. m.—Music. "Nurserymen's Problems in Fungus and Bacterial Diseases." By Professor H. S. Jackson, Oregon Agricultural College. Discussion—A. van Helderbeke, Spokane, Washington; A. W. Morrell, state entomologist, Phoenix, Arizona. "Uniform Horticultural Laws: Their Enforcement and Benefits." By A. J. Cook, Sacramento, California; D. J. Tighe, Billings, Montana. Discussion—F. H. Wilson, Fresno, California. (Subject to be selected), Professor C. I. Lewis, Oregon Agricultural College. "Between the Nurseryman and Fruit Grower." By Professor

O. M. Morris, Pullman, Washington. Brief Discussion—L. C. Stark, Louisiana, Missouri; Charles P. Hartley, Emmett, Idaho.

Thursday, 7:45 p. m.—Paper (to be announced). Meeting of state vice presidents.

Friday, June 20—American Association Business Session: 9 a. m., Report of secretary, John Hall; report of treasurer, Chas. J. Maloy. Committees: Executive, Henry B. Chase; cooperation with entomologists, L. A. Bereckmans, Augusta, Georgia; Legislation, east of Mississippi River, William Pitkin; legislation, west of Mississippi River, Peter Youngers; publicity and trade opportunities, W. P. Stark; root gall, E. A. Smith; tariff, Irving Rouse; transportation, Charles M. Sizemore; membership, James McHutchison; exhibits, F. W. Power; entertainment, J. B. Pilkington. Election of officers. Resolutions and unfinished business.

The Pacific Coast meeting is one that will long be remembered by everyone who was fortunate enough to be able to attend. The meeting was interesting and instructive from beginning to end and the papers and addresses given were all excellent. Our Eastern nurserymen were unanimous in their praise of our wonderful Northwestern country, its magnificent scenery, its fertile soil, beautiful orchards and wonderful climate. They were not only pleased but surprised at the wonderful entertainment and the generous hospitality that was so cheerfully given, and we might say gracefully received. The Pacific Coast has long been known for its generosity and its hospitality at all of its conventions. We do not believe that any nursery convention ever held anywhere was so generously entertained as was the joint convention of the National Nurserymen's Association and the Pacific Coast Nurserymen's Association. Everybody learned something, everybody had a good time and everybody was happy.

Effect of Moisture on Soil Temperature

Soil moisture affects the temperature of the soil in two distinct ways. Water has a high specific heat, requiring about five times as much heat to obtain an increase in temperature as is needed for an equivalent weight of soil. For this reason soils with a high retentive capacity of water will warm up slowly. Before water can evaporate from the soil a large amount of heat is necessary to change the water from the liquid to the gaseous form. Consequently when evaporation takes place a large amount of heat is necessarily lost from the soil's surface. As a rule soils like clay, which have a high retentive capacity of water, are usually lower in temperature than soils like sand, which have better drainage. This is particularly noticeable in the springtime; clay soils being cooler, while sandy soils, owing to good drainage, warm up rapidly and are known as early soils, while the cooler soil like clay is termed a late soil.—James D. Marshall, Colorado Agricultural College, Fort Collins, Colorado.

A central selling agency has been formed in Nova Scotia, Canada, called "The United Fruit Companies of Nova Scotia, Limited." This central agency operated last year on a small scale and met with such wonderful success that this year thirty companies have joined.

Mr. Brierly's Report of the Fruit Marketing Investigations

By W. G. Brierly, Pullman, Washington

BECAUSE of the scarcity of definite information on the marketing question, the subject has been taken up for investigation through circular letters to representative independent growers and associations on one hand and reliable commission firms on the other hand. This investigation has not been carried on with the intention of preparing a brand new, always workable solution of the marketing problem. Far from it! The intention has been, rather, to gather together the varied experiences of our growers and dealers and to present this material in as concise a form as possible with the hope that it may be of some little value in the solution of our present marketing complexities.

The circulars to the growers and associations asked for information on the following points: The various methods of selling and which was preferred, causes of loss in marketing, method of recovery for loss, the best method for general dealings with commission men, the value of the label and general remarks. The circulars to the commission firms asked for information on the following points: The method of obtaining fruit from the growers and which was preferred, the methods of selling and which was preferred, to whom the fruit was sold; commission charges, whether per package or percentum; an estimate of a fair profit per package, causes of loss to the growers, methods of dealing with the growers in the settling of accounts and general remarks. The replies to these letters have been very satisfactory for the most part and have amounted to over forty per cent of the number sent out, some of them being very complete, giving a considerable quantity of useful material.

In considering the replies from the growers an explanation of the different ways of marketing will help in their interpretation. The various methods are track sales, f.o.b. sales, delivered sales, consignments and contract sales, which may be a modification of any of the preceding forms, or the method known as "on grower's account" or "on joint account." The track sale is one where the grower or association makes the sale arrangements direct with the buyer, who pays for the goods when loaded in the car. The f.o.b. sale is the term applied when the sale is made direct by the shipper to the buyer or jobber at a distance from the point of origin, the sale being made by wire or letter. They are called f.o.b. sales because the price is fixed f.o.b. the shipping point, but actually they are not such as the goods are billed to the order of the shipper and remain his property until paid for. A sight draft for the amount of invoice is attached to the bill of lading and the buyer must pay the draft before the goods are surrendered to him. Delivered sales differ from f.o.b. method in that the price

agreed upon is for the fruit delivered at the point of destination. The buyer frequently demands a delivered sale when he is uncertain as to the rate of freight charges on the shipment. The draft accompanying the bill of lading is made for the full value of the fruit and includes the freight charges. Consignment is, as one man has said simply loading the fruit or produce in a car and saying goodbye to it. The consignments are made in car lots or less by growers or shippers and are sent to jobbers or brokers in distant markets. The receiver usually invests nothing in the shipment except the freight charges, and these charges are always deducted from the returns to the shipper. Contract sales may be along any of the above plans or on grower's account or joint account. With the grower's account method a standing contract may be agreed upon where all of the fruit of the shipper is to be handled by one firm during the season. This is as far as the contract goes, but it is to the mutual advantage of the contracting parties to get either the best fruit or the best prices. It is virtually a method of consignment that is not of the hit or miss order, but on a regular business basis. In the joint account method a minimum price per package is agreed upon, and if sold for more the grower gets a proportionate amount of the increase. Contracts may also be made at the beginning of a season and include the entire crop of the grower or of a district, to be handled by the contracting buyer, payment to be made upon delivery.



Mr. M. McDonald, President of the Oregon Nursery, Orenco, Oregon, one of the largest nurseries in the United States.

Method of Selling—Which Is Preferred and Why.—Of those who answered this question fifty-five per cent were strongly in favor of the f.o.b. method, or would use it in general seasons in preference to all other methods. Twenty per cent preferred some form of the contract sale, ten per cent preferred track sales, five per cent said the delivered sale suited them best and ten per cent were unable to state a preference, as they said the seasons varied so that the method adopted one year would be entirely unsuited the following year.

Some of the reasons given for the choice of the f.o.b. method were as follows: 1. F.o.b. is the only logical method of merchandising in any commodity, fruit not excepted, as it insures the producer a certain net return. 2. The grower understands what the price is to be when fruit is loaded. 3. Grower controls his product till he gets the money. 4. The grower is relieved of any further responsibility in the handling of the fruit when it is accepted by the dealer. 5. Loss to the grower is prevented even if fruit is sold at a loss. 6. Fewer heart-breaking experiences. 7. Delays, claims and declining markets avoided. 8. Shipping point is the only place where the grower knows all about his fruit. 9. There is no loss of sale area—the market is all ahead of the fruit.

The reasons advanced for the contract method are as follows: 1. Enough advance money or guarantee to pay for growing, picking and packing. 2. The Rocky Ford Melon Growers' Association states that it has always been able to get an advance over the contract price. 3. A long-term handling contract will insure that the fruit will go into the same market each year. 4. Loss is prevented even if no returns are made.

The track sales method was chosen mostly because the grower gets his money without delay, but it is stated by those selecting other methods that only a relatively small amount of produce can be handled in this way. The latter statement may be true where no attempt has been made to build up the track method. The grower has control of his product till he gets the money for it, but track buyers have been driven out of a shipping district by the unreasonable prices asked by the growers.

Delivered sales were chosen by a small percentage of growers on account of this method being so nearly like the f.o.b. method and having the disadvantage of leaving the responsibility with the grower for a longer time.

Not a single reply favored the consignment method where other ways were available. There is too great a risk in this method and the grower wants a safer way to market his fruit if he can find one. In some seasons, however, the consignment method may



Delegation of Eastern Nurserymen en route to Nurserymen's Convention at Portland

This picture taken at the home of W. N. Granger, Zillah, Washington. Nurserymen were given banquet of home-grown strawberries, cherries and other fruits, together with all the "trimmings." W. N. Granger, pioneer in irrigation of Yakima Valley, having been connected with the Sunnyside Canal for about eighteen years, since the first period of its construction, about 1893.

be the only satisfactory one, and in seasons like 1912-13 the buyers may refuse to handle the fruit on any other basis.

Those who expressed no preference as to methods made some very interesting observations on the subject. One reply stated that the subject was too large to be handled in the course of a letter—that volumes could be written on the subject without exhausting it. Others got away from the subject a little and stated that co-operative marketing was the only way, but of course the associations have to follow the same methods as an independent grower.

Causes of Loss in Marketing.—The answers to this question gave a great many reasons why the grower suffers a loss in the marketing of his fruit, but it might all be summed up in saying that most of the losses come from various sorts of careless or incompetent handling, together with unfavorable weather conditions. One association manager states that the causes of loss are so varied that it would be impossible to name them all. Another states that it is impossible to state all the causes and opportunities for losses. However, a partial list can be set down here which will include the more important of the reasons given by the growers for losses sustained: 1, weather conditions; 2, careless picking; 3, picking when wet; 4, poor grading; 5, poor packing and poor packages; 6, too much handling; 7, rough handling; 8, poor quality; 9, mishandling; 10, deterioration or decay in transit; 11, holding or storing too long; 12, overripeness from any cause; 13, poor ventilation in cars and storage; 14, too sudden changes of temperature; 15, freezing in transit; 16, shipper not fully advised on market conditions; 17, inexperience; 18, incompetency; 19, declining markets on consigned shipments; 20, placing variety on market at wrong time; 21, rejection of f.o.b. ship-

ments when market is low; 22, dishonesty of commission men; 23, delay in transit; 24, competition among growers or associations; 25, poor distribution; 26, oversupply; 27, overproduction; 28, holding out for too high prices; 29, financial stringency. Surely from this list the grower can pick out a cause to suit. Of course there will be losses occurring with the most careful management of the marketing work, but with continued care and the ability to profit by experiences, nearly all of these causes for loss can be avoided. There is always an uncertainty in the fruit market due to the weather, the season, the size of crop, the supply of other fruits and the general demand of the buying public, but aside from these there is evidently a need for great improvement in our fruit marketing, the basis of which might be said to be in care all along the line.

Method of Recovery for Loss.—If the loss is occasioned by some fault of the transportation companies through poor equipment, cars with faulty insulation, not enough ice, or failure to re-ice at proper intervals, the carrier will generally settle for it if the claims can be properly substantiated. This can only be done by keeping accurate record of the condition of the fruit on arrival and must, of course, be done by the receivers or agents of the shipper. Even then there may be long and aggravating delays before settlement, going along for years before finally settled, and the shipper gets no interest on his money. If the loss comes because of a rejected shipment, the shipper may divert the shipment or sell to someone else in the same market and come out ahead on the deal. In many cases there is no practical method of recovery for loss, as the process of law is expensive and often unreliable, and the grower can hardly afford to carry a case very far in the courts. Several replies stated that to be careful not to try to handle poor fruit and to handle good fruit as

carefully as possible would eliminate many sources of loss or reduce them to a minimum. One grower laconically states in answer to this question of methods of recovery for loss that there "ain't none." If loss is caused by the lack of organization it may be prevented by the formation of an association, if this is possible, but this cannot be done in all communities. One answer says that the remedy is to put marketing of fruit upon a practical and not upon a theoretical basis, but it is hardly probable that fruit marketing is done on any than a thoroughly practical basis where such a basis can be found.

Best Methods for General Dealings With Commission Men.—This question was answered from somewhat the same point of view as the first question, some stating the f.o.b. or contract methods were the best. The answers going more to the point and stating that prompt returns and reports of sales be made at least twice a week. This, however, is the method adopted by the best dealers, so the two sides of the question fit well together. It is well, of course, to see that the firm one wishes to deal with has a good reputation and good banking references. The Produce Reporter Company of Chicago has this information, which it gives to members, but membership costs a hundred dollars a year. This bars out many small growers, which may be an argument for co-operation. Dealing through and with one firm gives best satisfaction to the majority, as the acquaintance between producer and dealer is made more intimate and each gains respect for the other. If the volume of business is large enough the dealer will often take very good care of it, so that satisfaction may be given and the business relationship maintained. Some growers and associations have the idea that all commission houses are crooked in their dealings and their advice is to not deal with them at all, but to deal through the jobbers and brokers or other dealers. It was not the purpose of this investigation to distinguish closely between these various types of dealers, as commission business, jobbing and brokerage may all be done by one firm. Shipping f.o.b. with sight draft attached to the bill of lading, with the privilege of inspection, is recommended as a safe method where the integrity of both shipper and buyer has not been firmly established. Business methods should be employed in the dealings with the fruit handlers, just as these methods would be applied to any other group of business men. These firms expect businesslike methods on the part of the shippers. The shipper may try to work some scheme for his own advantage, and if caught, as he usually will be, he is always inclined to call the dealers all sort of names.

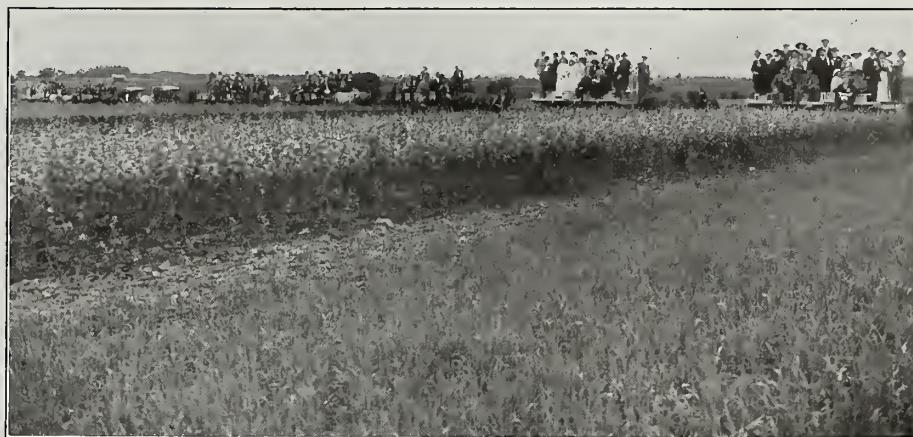
Value of the Label in Selling.—The answers to this question showed that, to many, the advantages of the label are not clearly marked. Some say it is very important, others say its wide-

spread use to some extent indicates a value, or that they are unable to say as to its value. It is stated in one reply that the value of the label depends upon these things: first, the quality of the goods in the package; second, the advertising given the brand, and third, the design and coloring of the label, which must be neat and attractive. Another reply says the association would not think of doing without the label. One association thinks that the label on the box is of no great value, but that the labeled fruit map is splendid. Another report says there is no apparent difference when used and when left off. The following are some opinions on the question. A good, handsome, attractive label is a valuable asset. A cheap label is a detriment. A new label is of little value, but an established label, with a responsible firm back of it, is of considerable value. Its value depends upon the uniformity of grading year after year. The value depends upon the honesty of the user. Labels are expensive, but paying. They add to the appearance of the box. They are an absolute necessity. While there is no dollars-and-cents valuation placed upon labels, it will be seen quite readily that the growers and associations are strongly in favor of using them.

This, then, is a brief summary of the marketing work as gathered from the experiences and preferences of the growers. On many of the important features the growers quite naturally agree, as would be expected when they are both working along the same lines. Turning now to the dealers' side of the question, the subject considered first is the question discussed first from the growers' viewpoint.

Methods of Obtaining Fruit—Which Is Preferred and Why.—Of the dealers who replied to this question twenty-nine per cent preferred the f.o.b. method for general dealing, although some of them stated a willingness to use other methods at times. Twenty-four per cent preferred the consignment method, six per cent liked the contract method, while the remaining forty-eight per cent stated no preference for any particular method. Some of the reasons advanced for or against the f.o.b. method are as follows: It is the only true solution of the marketing problem. The dealer can get what the market requires in quality and style of pack. The dealer makes more money by this method if properly conducted. It is the best system when quality can be obtained at right prices. The growers often ask more than the fruit is worth, so that, even if the method is best, consignment is the only alternative. The method should be used with care and only under the most favorable market conditions. It is speculation of a kind and is disturbed by promiscuous consignments. Only one method should be used to give satisfactory results, either all f.o.b. or all consignment.

The chief reasons given for or against the consignment method are these: It is best for highly perishable fruits that



Members of the National Nurserymen's Association and the Pacific Coast Nurserymen's Association, with their wives, being driven through the Oregon Nursery at Oreno, Oregon

must be moved, and for which the grower cannot find a buyer quickly enough, to dispose of the shipment before deterioration begins. There is no speculation on the part of the dealer. This method is best for goods that sell slowly. Firms which have been established for a long period of time may have regular customers who prefer this method. One such firm said that, in justice to their customers, they would not buy and compete with them. Consignments cannot be regulated as satisfactorily as f.o.b. supplies.

The chief reason given for the contract method, taken from the grower's account standpoint, was that it equalized profit and loss between grower and dealer. Other methods, such as f.o.b., were said to give a too large profit to the dealer or to make the grower stand all the loss. It was also stated that contracts were one-sided and usually in favor of the dealer, so that growers avoided them. The contract depends so much upon the personal acquaintance that, as a general marketing method, it is not in great favor.

Of the dealers who stated that they had no preference for any one system or method, practically all agreed that their method would depend upon the market conditions, and that they would use any method that seemed suitable to conditions in a given market or season; that sometimes one method would be best and again other methods would give more satisfactory results. Each dealer may have certain methods peculiar to him in conducting this part of the business and a wide-awake dealer will always shift his methods to suit conditions.

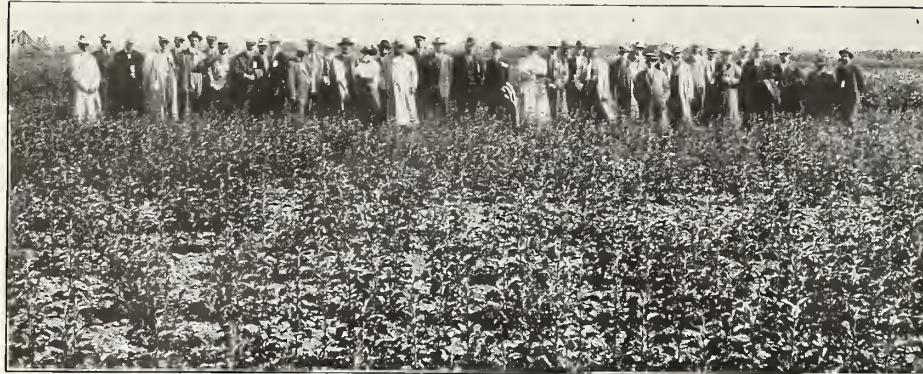
Method of Selling.—Practically all dealers state that they prefer the private sale wherever it can be made. Some state that the auction market is suitable for the handling of perishable fruits that must be placed in the retailer's hands as quickly as possible, but one reply stated that the auction was the method used by the lazy man without initiative, or by poor salesmen. The auction method was condemned by some, as the dealer had no control of the sales, whereas with the private sale the deal was between two parties only and was under direct control. Inferior grades of fruit should be sold at auc-

tion, according to several dealers, as there was no demand for this stuff in the private sale. If the firms were distributors, they stated that they would sell through either of these methods, according to which would move the fruit to best advantage.

To Whom Sold (commission firms, etc.).—The majority of replies stated that they sold to wholesalers only, but some said they dealt with anyone not a receiver. A few said they might deal with retailers as well as wholesalers. Some answers summed it up shortly in saying they sold to any responsible party with sufficient funds.

The Commission Charges by Package or Percentage.—The replies to this question indicated variable rates, ranging from two and one-half per cent above auction charges, or \$25 a car when sold on auction markets, up to fifteen per cent of the gross sales. The average would run close to ten per cent, and as this is indicated by the dealers for the general sales it would seem that it is a fair percentage. The charges will run lower, according to varying conditions, as follows: Track sales by the car lot may run as low as five per cent; on the auction market, depending upon the quality and value of the goods, from five per cent to seven per cent is stated as a common charge. Seven per cent is often charged on association sales. Seven to ten per cent of gross sales by the car lot. Ten per cent on less than car lots, with a minimum of five cents per package. Ten per cent by private sale. Ten to fifteen per cent of gross sales, depending on kind of fruit and expense of handling. A package charge may be made on small lots and the ten per cent average charge may at times be made lower on contract. One reply stated that seven to ten per cent of gross sales would give grower the best service possible.

Estimate of Fair Profit Per Package.—On an f.o.b. basis the dealers indicate that they desire a profit for themselves on the transaction of ten to fifty cents per package, depending upon the size and contents of the package. A smaller profit is taken on a small than on a large package, or the profit is somewhat proportionate to the value of the package. With a large volume of trade a lower profit may be taken, as it is stated



Delegation of Eastern Nurserymen en route to Nurserymen's Convention at Portland. This picture was taken in Washington Nursery Company's apple block June 16, 1913. Yearling apple in foreground, two-year apple in background.

that it is the volume that counts. One reply stated that for boxed apples a profit of twenty-five cents per box was taken when sold to wholesalers and fifty cents when sold to retailers. If the sale is on the commission basis, then the profit is, of course, the commission charged, less cost of handling.

Causes of Loss to the Growers.—With a few minor exceptions, the opinions of the dealers coincide with those of the growers in regard to the causes of loss to the grower. The dealers emphasize the fact that much loss is caused by poor grading and packing, saying that more loss is occasioned in this way than by any other means. One item of note is that misbranding is often charged against the grower as a source of loss, and the dealers should be good judges on this point.

Method of Settling Accounts With Growers.—There are three general

ways indicated in the replies. Cash for track sales, meeting the draft attached to the bill of lading in the f.o.b. deals, for other systems of marketing the best method is said to be prompt remittance at completion of sale, or to balance accounts and make remittances once or twice each week. One of the old, well-established firms stated a partial advance was made on consignments, as it was their opinion that the growers needed all the financial assistance that could be given to them at harvesting time, when they are under a heavy expense, and further stated that in their opinion dealers in general should be in position to give this assistance.

In closing it might be of interest to compare the various ideas in regard to the general difficulties experienced in the marketing of fruit within the last

few years. The general idea is that the distribution of the fruit has been poor. Doubtless this may be true, but a more important fault is pointed out by a firm of excellent reputation and long experience, their statement being that distribution is in the main very good, but that the evil lies in the growers sending out poorly graded, poorly packed and often misbranded stuff. They state that at least twenty-five per cent coming from the West and Northwest in 1912-13 was of this character. A third explanation is that the growers fail to realize that the dealers are business men whose interests lie in the success of the growers and that the growers have an unwarranted distrust of the dealers in general because of a few bad sales, and attempt to run the prices higher than the situation warrants. A fourth explanation is that there is a great demoralizing effect due to the failure of f.o.b. and consignment systems to work in harmony, and that there is altogether too much competition between districts. If the results of this investigation could be summed up for advice to growers it would probably amount to this: Handle carefully always, maintain rigid grading and packing rules and inspection, make the packages as attractive as possible, select dealers carefully and then play fair or, as one dealer aptly says, "Follow the Golden Rule." This is only a repetition of the advice that has been given for many, many years, but it seems that if the grower would take these things more to heart he would profit thereby.

The Food of An Apple Tree

By J. A. Balmer, Cle Elum, Washington

ALL deciduous trees indigenous to the temperate zone, and that includes apple, pear, plum, cherry, peach, apricot, etc., of our orchards, derive their sustenance from two sources, viz., from the soil and from the air. In the soil the roots are the agents that absorb the liquids that are carried to every part of the tree; in the air the leaves are the absorbers and manufacturers of the substances that go to build up the framework of a tree.

We may profitably for a moment look at the actions of the root of an apple tree. We are accustomed to say that roots travel in the soil. This is not strictly true, for the root is added to at the tip, or rather just behind the tip, but the root once formed, while it will and does enlarge and expand, yet it retains the same position in the soil where it was first formed. The active portion of the root is the last inch or so that was formed, and this portion only is concerned in the absorption of nutriment from the soil. The extreme tip of the root is a hard, scaly point, and in this portion of the tree—according to Darwin—the brains are located. This hard point, which might be likened to the point of a corkscrew or gimlet, is forced between the particles

of soil, it is said, at a pressure of from one-half a pound to seven pounds; and that it travels with some degree of intelligence cannot be doubted, for it steers around rocks and other obstructions and clings to particles of matter like bones extracting the elements of food as it passes; and it would even seem to have a sense of smell and direction, for it is known that in the case of a grapevine the roots took a direct course to a cesspool forty feet away, where food was more abundant than in the soil near home. Immediately behind the growing part of the root are situated a bunch of fine root-hairs, the office of which is the selection of food. It has long been contended that these root-hairs have the property of secreting and excreting acids which act on the mineral matter in the soil and are powerful solvents. This view, however, is now modified to some extent and carbonic-acid-gas-carbon dioxide is all the excretions now claimed for these important functionaries. No plant food is absorbed by the roots except in a liquid form. All material, vegetable, mineral or gaseous, must first be dissolved in soil water before it is available for plant nutrition. It may be said that trees are never wholly

inactive; even in the dead of winter there is some activity. All nature is perpetually in a state of change, but the greatest activity in fruit trees occurs in the spring of the year under the influence of light and warmth. The function of the root then is to pump soil water to the leaves. I use the word pump here as a simple means of describing a very complex physiological process. Roots do not in reality pump water any more than leaves suck water, yet they both exert an influence to this end. Atmospheric pressure, too, gets some credit for the movement of liquids in trees; this movement or exchange is termed osmosis.

The two great factors in the feeding of trees are the roots and the leaves. The soil supplies to the roots, as we have seen, water in large quantities, gases, earthy and saline substances, but the air is an equally important source of nourishment, or even more so; no plant that is of direct importance to the cultivator can live without air. Unlike the root, which originates from within the substance of the plant and breaks its way out to the surface, the leaf is a direct production for the surface of the stem or branch. The leaf is in many respects the most important part of the

plant; it is essentially the manufacturing organ and on it depends the whole power of the plant to grow. The air, we know, contains from three to four volumes of carbon dioxide in every ten thousand, and small as the proportion may seem it yet represents an enormous quantity of carbon dioxide upon which the tree can draw. Leaves under the influence of light split up this carbon dioxide of the air, retaining the carbon and setting free the oxygen as gas; so trees during the growing season are continually purifying the air through the action of their leaves. The leaf is a living, breathing thing and is able under the influence of light to manufacture starch and oxygen out of carbon dioxide and water. Though starch is manufactured in the leaf it does not accumulate there; in the darkness it is moved away and stored in other parts of the tree, where it undergoes changes and is used in the manufacture of tissue. The energy required to effect the change is in fact obtained from the light; the green leaf simply acts as a kind of transformer of the energy coming from the sun in the form of light into stored-up energy possessed by vegetable material. You are all familiar with this energy; if you put dry wood, even the wood of an apple tree, under a boiler and light it you find it contains a very considerable energy. And it is said that a tree lying rotting in the forest gives off the same number of heat units in its slow process of combustion as if it had been consumed by the quicker process of burning under a boiler. The fact that the green leaf supplies the driving power of the whole machinery of the tree finds a good many applications in practice. You have all seen a young tree denuded of its foliage by caterpillars; the result was the death of the tree. Summer pruning is a common process of half killing a tree, compelling it prematurely to perform its life function of establishing fruit buds and bearing fruit. The removal of the leaves means that the manufacturing processes of the trees are stopped; no more carbohydrates, no more sugar are formed; the fruits remain small and without their proper sweetness because of the cutting off of the supply of sugar. Assimilation and respiration do not, however, represent the whole work of the leaf; it has another fundamental piece of work to perform—that is, to get rid of the water from the tree. The surface of the leaf will be seen to be studded with small mouth-like openings called stomata, and these openings on the leaf of an apple tree are much more numerous on the under side than on the upper side of the leaf.

The stomata, which open and close according to the illumination, the temperature, the degree of humidity of the air, etc., form a means of communication between the outer air and the surface cells in the middle of the leaf. Through the stomata the tree takes in the carbon dioxide it requires for assimilation and in its turn exhales oxygen; through them again it exhales

carbon dioxide when it is respiration and gives off its transpiration water in the form of vapor; as a rule the water escapes in the form of vapor and continues to be invisible, but when the surrounding atmosphere is saturated it may condense as drops on the tip or edge of the leaf; thus arises the greater part of the dew which covers the grass in the early morning.

Many experiments have been made to ascertain how much water a plant transpires during its growth. For example, in England Laws and Gilbert



R. Layritz, of the Layritz Nurseries, Victoria, British Columbia, President of Pacific Coast Nurserymen's Association for the years 1913-1914. The next convention of the Pacific Coast Nurserymen's Association will be held in the City of Vancouver, British Columbia.

concluded that for every pound of dry matter elaborated by such plants as wheat, barley, clover and peas about 250 pounds of water was evaporated from the leaves. Hellrigel, in Germany, with a drier atmosphere obtained results about fifty per cent higher, while Wollny, in Vienna, and King, in Wisconsin, with still hotter and drier climates obtained even higher rates. It would be pretty safe to assume that for every pound of dry matter made by fruit trees in the Yakima Valley 1,000 pounds of water is transpired by the leaves. Because of the large amount of water evaporated by a tree the ground beneath it is usually in a very dry condition. This is especially true of non-irrigated orchards; and if an attempt is made to grow a cover crop of some kind amongst the trees the case is much aggravated and must necessarily work an injury to the orchard. Our opinion is that no kind of cover crop ought to be grown in an orchard after the trees come into bearing. Outside of the extra moisture required for the cover crop and the necessary robbing of the soil of its available fertility, Professor Pickering, at Woburn, a government experimental farm in England, has

found positive evidence of injury to fruit trees by the grass roots occupying the orchard soil. Many experiments have been carried out to determine the moisture contents of soils under crop and in bare fallow. At Rothamsted, in England, in June 1870, after a long drought, to a depth of fifty-four inches, bare fallow was found to contain 900 tons per acre more water than an adjoining plat on which barley was growing. This amount of water is equivalent to nine inches of rainfall. So much for the functions of root and leaf. Let us now for a moment consider the soil.

Any description of soil usually starts out with the statement that all soil is decomposed rock, but it would be equally easy to prove that all rock is solidified soil. I am led to make this statement from observation of conditions at Cle Elum, where I live. As some of you probably know, Cle Elum is a coal-mining town; there are numerous coal mines all around. One Sunday afternoon some summers ago I was invited to take a trip into one of these mines and examine the workings. Down in the bowels of the earth, 200 or 300 feet below the surface, my attention was called to the appearance of the cap-rock. Above the vein of coal the ceiling of the tunnel was beautifully frescoed with the imprints of willow leaves and ferns of various sorts—perfect imprints, just as if you had gathered the leaves and pressed them in a book, and thousands of them. Thousands of years ago, when the coal which is now being dug was vegetation on the earth, or seaweed in the bays, as is now being claimed, there began to be deposited on the top of this matter which we call coal drifting soil and leaves, in places several inches in other places several feet; then on top of this comes sand to a depth of a few feet to 200 or 300 feet; on top of this clay and boulders, then a thin stratum of what we call soil, in which the roots of giant pines and firs have found lodgment. Now here is evidence that there is at least 300 feet of deposit on top of the coal, and all of it was at one time drifting matter which we call soil, but it is now seger-clay or cap-rock, sandstone, some of it quite hard and some quite soft—much of it suitable for building purposes. So if it is a fact that all soil was rock, here at least is a case where rock was soil. However, this is a digression. We will leave this knotty problem for the geologists to discuss and to get down to terra firma again we will say soil is the material in which we plant orchard trees and other things, and it is mainly made up of mineral and vegetable matter in the process of decay. We speak of clay soils, sandy soils, muck soils, volcanic-ash soils, etc.; and each of these grades have intergrades, so we have a great variety of soils. A remarkable fact disclosed by chemical analysis shows that all soils contain much the same elements and in about the same proportions. Considerable uniformity is shown in the soil contents of the three

essentials in plant nutrition, viz., nitrogen, phosphoric acid and potash; and it is rare indeed that the constituents soda, lime, magnesia, iron, manganese, alumina, chlorine, silica, phosphoric and sulphuric acids are missing. What, then, makes the difference in the various soils? Why is one soil fertile and produces fine crops while another, perhaps right alongside of it, is infertile and produces inferior crops? Chemical analysis sheds no light on the question, for except in the case of nitrogen content of soils it cannot tell what elements are available to the growing plant. Only the plant can answer the question of available fertility, and only the observing husbandman can interpret the answer.

We are accustomed to say that the apple requires for its best development a deep, rich, loamy soil. It is true there are a great many such soils on which trees are doing well; there are also many soils and locations in which trees are not doing so well. The question of available food for an apple tree will depend upon the water content of the soil, upon the humus content of the soil, upon the permeability of the soil, upon the mechanical condition of the soil, and above all upon the bacterial activity in the soil. The water movement in the soil is almost wholly up and down, rather than laterally or horizontally, and the greatest fertility in most all soils is in the first nine inches, or that portion affected by the plow and cultivator. Water must pass through this top layer in order to carry food to the tree roots. Furrows in which the rills of water run, then, ought to be very close together, say two to three feet apart, for the best results; of course rain over the whole surface would be better still. To achieve the best results the mechanical condition must be carefully looked to and after each watering the cultivator ought to be run to break up the solidified condition brought about by the watering or irrigation. The loose layer of soil on the surface prevents the too rapid evaporation of the moisture in the soil. The humic content of the soil is the most important of all, for on it depends very largely the entire manufacture of food for the roots through the agency of bacteria. Nitrogen is by all odds the most important of plant foods, and it is manufactured in the soil solely from decaying vegetation and organic matter. Of course, it can be supplied to the soil in the form of mineral salts like nitrate of soda and sulphate of ammonia, but this is a wasteful and expensive way to use it, for it is much cheaper to keep bacteria actively engaged than to buy nitrate of soda at seventy dollars a ton, which contains only 300 pounds of nitrogen. In the main, then, a fertile soil is one rich in the debris of previous vegetation, one which has been sorted out by running water, wind and the agency of worms, as to possess a very uniform texture adapted to satisfy the needs of plants for air and water. Drift soils, i. e., soils formed largely through the

agency of wind and water are invariably fertile soils, and their mechanical condition admits of the freest movement of air and water in the soil, and consequently to the fullest development of root and leaf. But all this is preliminary to the question in hand; you have the orchards already planted and you are desirous of improving them. Some are planted in volcanic-ash soils, so-called, others on clay, others on sand, some under irrigation, others without water, and all trying to produce a high grade of fruit. The question of what to do will always be a local one; no universal rule or practice will suit all conditions. We will approach the subject from the angle of improvement by fertilizers.

First let us consider a clay soil, which is usually fertile, as many of the clays contain considerable quantities of nitrogen and always an abundance of potash. Lime, ground limestone, bone meal, marl, gypsum and phosphatic preparations all have the faculty of flocculating clay soils. Flocculating is causing the fine particles to run together in little grains or balls, of which shot clay, so common west of the mountains, is an example. All these materials are reagents, letting loose the abundant potash and at the same time improving the mechanical condition of the soil. Strawy manure from the barnyard, plowed under in the fall, acts well with the fertilizers just mentioned, and this combination persisted in and practiced will eventually ameliorate the stiffest clay and keep the surface layer well supplied with plant food. Notice that I said plowed in the fall; this is important. The same soil plowed in the spring, especially if you failed to catch the land in the right condition of moisture, might ruin it for the season. There is no agent equal to frost as an ameliorator of soil. No harrow or other implement is needed after fall plowing; leave the land as rough as possible so as to expose the greatest surface to the weather. Potash and nitrate of soda ought never to be used alone on clay soils, for their effect on soil particles is to deflocculate, causing the land to mat close together, rendering clay soils impervious to water and air, and when dry to crack and run into great clods.

Potash salts may be used with safety and sometimes with profit on sandy soils, light ashy soils and on soils containing abundant decaying vegetation. The supplying of potash to plants is rather that of liberation than application, for very few soils are deficient in this mineral; and in nearly all Washington soils there is enough potash in the first three feet to raise and perfect one thousand crops of apples. In dealing with fertilizers it is necessary that the fruitgrower should bear in mind the very different action of the three essential constituents—nitrogen, phosphorous and potash—upon the growth of the tree. While all are equally necessary to the growth of the tree, yet they possess very different functions in its development.

Nitrogen is mainly concerned with the vegetative development of the tree and increases the tendency to form leaf and stem; thus if a tree is given an excess of nitrogenous manure the leaf system becomes excessive, a great number of shoots are formed and the tree tends to go on growing rather than to turn to the production of fruit and flowers. At the same time it is always found that the rapid growth promoted by the excess of nitrogen is both soft and long-jointed and is very susceptible to attacks of fungoid diseases. If nitrogen promotes the vegetative side of a tree phosphoric acid, on the other hand, hastens maturity and favors the reproductive side of its development, as, for instance, the production of fruit and seed. Phosphatic manures never give rise to the immediate burst of growth and dark color and look of vigor which follow the application of nitrogen; their effect is only to be seen at harvest time, and particularly in the proportion the fruit bears to the rest of the produce. Potash is particularly concerned in the manufacture of carbohydrates by the tree; it tends to keep them growing, especially on light soils and in dry climates, and it increases the disease-resisting power of all plants.

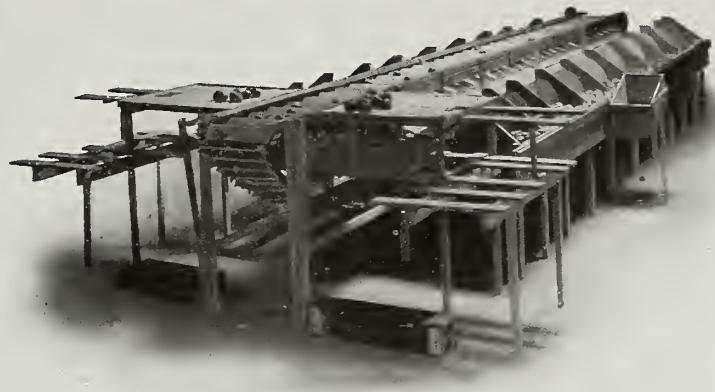
Nitrate of soda has a place in the economy of fertilization of soils, but that place is certainly not in the orchard. Nitrate of soda acts quickly; it is almost immediately dissolved in soil water and the nitrogen is at once available to the feeding roots. An excess of nitrogen acts injuriously in that it stimulates, causing an excess of growth of a soft and spongy nature; the growth of a tree is a slow process and anything in the nature of stimulation ought to be avoided; leave the nitrate of soda to the grower of cabbage, lettuce, spinach, etc. I have just said that nitrate of soda is a great deflocculator, consequently a destroyer of the tilth of the soil.

Bacteria is the agency to which we must look for the permanent improvement of our orchard soils. Bacteria live in organic matter, and in organic matter only; their office is to attack and destroy all vegetable matter entering the soil—this broken-down matter we call humus. Humus, considered merely from the physical side, contributes largely to the fertility of the soil; it improves the texture of all soils; to sands it gives cohesion and water-retaining power, while by loosely binding together the finest particles of clay soils it renders them more porous and friable. A soil which has been enriched in humus by repeated applications of barnyard manure will resist drought better than one in which humus is low; the difference is seen not so much in the greater amount of moisture present in the soil containing humus as in the way it will absorb a large amount of water temporarily during heavy rainfall, and then it works more slowly down into the soil, thus keeping it longer within reach of the crop. This is fully illustrated and has been brought out in the experi-

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ments at Rothamsted, in England, on tile-drained lands; on heavily-manured plots after rains the drains rarely ran, while on unmanured plots after the same rains the drains ran freely, showing the water-holding power of lands rich in humus. The best way, then, to feed the roots of apple trees on any kind of soil is to keep the land well supplied with organic matter, and for this purpose there is nothing so available as animal manure. A soil well supplied with manure, affording the proper environment in which bacteria may live and grow, gradually producing a slow, steady supply of nitrogen developing within the soil the necessary acid condition through the activity of the roots to attack and dissolve mineral matter, thus developing the proper and complete functioning of the tree. Coupled with this practice, there ought to be enough cultivation to preserve a proper surface condition.

My idea of conducting soil operations in the orchard is as follows: In the autumn, as soon as the fruit is gathered, turn in a good, strong team and breaking plow; plow the land as deeply as practicable, leaving the slices just as the plow throws them; the surface will then be in the best condition to catch and retain all winter precipitation, whether rain or snow, and the fact that the soil is ridged exposes the maximum surface to the weather. Early in the spring, as early as the nature of the soil will permit, cultivate and harrow to a fine surface. Keep up the fall

plowing as long as you can use a team and plow between the trees; you will destroy some roots, but they will be mostly roots that have started at the collar above the graft and can well be spared in view of the immense benefit of the exposure of a rough surface to the winter weather. If you have manure to apply, the time to spread it is before the fall plowing, when the ground is dry and hard from the constant tramping due to the operation of picking and hauling the fruit. The nature of the land will determine the summer practice. If it be a non-irrigated orchard, all that is necessary is to keep a surface mulch to hold the moisture in the land as much as possible and to keep down weeds. Don't cultivate too much nor too late; let it be remembered that cultivation of the land is wholly destructive of its fertility unless the land is covered with an active growing crop—only enough cultivation to keep the bacterial flora gently disturbed, so the formation of nitrates may go on slowly. Too much oxidation of the land tends to burn up the humus rapidly; and it has not yet been fully demonstrated that nitrifying bacteria, those able to manufacture nitrates from the free atmosphere, independent of those bacteria in symbiosis with leguminous plants, are abundant enough in soils lacking organic matter, like the majority of our orchard soils are. On irrigated soils a cultivation after each irrigation ought to be ample to keep trees in good heart.

The main object, then, is to keep the soil in a fermenting condition by the application of organic matter, and in some cases lime. Mineral matter is already abundant in most soils—I may say in all soils—and our object ought to be its liberation so that it may become available as plant food. The growth of the tree will always be the best guide as to the practice to adopt. If the orchard be young and vigorous, making two to three feet of growth annually, no nitrogenous fertilizers are needed. To check the growth of trees on land apparently too rich discontinue cultivation early and withhold water after midsummer. When trees are all run to bloom buds and the annual growth is only a few inches or less, nitrogenous fertilizers may be freely applied as I have directed. Plant no cover crop or crop of any kind in the orchard after the trees come into bearing except as checks to excessive wood growth. Aim to regulate your soil practice to give the desired results, viz., a free but not rank wood growth; a moderate production of fruit buds. Do your thinning rather by soil practice than by the use of ladders and hands. Read all you can get hold of bearing on your vocation and read between the lines; make theory square with practice under your own peculiar conditions. No man knows it all; we are all in the kindergarten, but the man who has brains and mixes them with the soil will raise the best fruit.

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1906, at the Postoffice at Hood River, Oregon,
under Act of Congress of March 3, 1879.

International Apple Shippers' Association.—The International Apple Shippers' Association, comprised of about five hundred of the prominent fruit dealers handling apples throughout the United States, will assemble in convention on August 6, 7 and 8, 1913, at Cleveland, Ohio. This is one of the biggest conventions that is held by fruit dealers anywhere in the United States and one of the most important to everyone interested in the fruit industry, inasmuch as the work of this convention is devoted almost exclusively to the problems of marketing, which vitally affects everyone connected with the industry. This year special attention will be given to increasing the consumption of apples and the means of doing so. One of the important subjects that will come before the convention will be "Advertising the Apple to Increase Consumption." Mr. U. Grant Border is chairman of the committee on advertising and he has worked out a stamp plan for a fund for advertising the apple extensively, the idea being to have every concern handling boxed apples purchase one-cent stamps prepared especially for this purpose and to have every barrel of apples stamped with a two-cent stamp. The money obtained from the sale of these stamps to go into a fund for an extensive advertising campaign. Further information in reference to this matter can be secured by addressing Mr. U. Grant Border,

215 Light Street, Baltimore, Maryland. President E. N. Loomis, 95 Barclay Street, New York, has devoted much time to this year's meeting in order that it may be a success from every point of view. Mr. R. G. Phillips, secretary, 612 Mercantile Building, Rochester, New York, has devoted much time and consideration in making arrangements for the comfort of all in attendance and has arranged a most excellent program in the way of addresses, discussions, etc., that will not only be interesting but valuable information for everyone connected with the fruit industry. Mr. Phillips desires to have a conference of members of the association with prominent apple dealers in all sections of the country, therefore it is to be hoped that all apple growers as well as dealers will arrange, so far as possible, to attend this meeting. Special rates have been arranged for at the Hotel Stattler, the most magnificent hotel in the city and one that is most specially adapted for convention meetings.

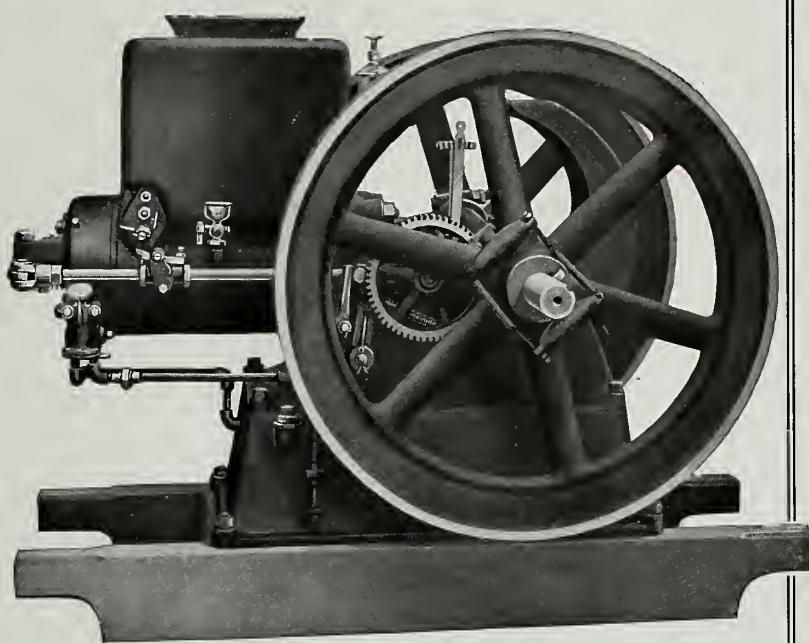
The Salem Cherry Fair.—The City of Salem has assumed the name of "The Cherry City." Annually for several years Salem has held a cherry show which has been a marvel of beauty and wonderful to behold. The show was visited by a large body of representative men, who went on special trains from Portland, including quite a number of Easterners. Everything is being done to improve the cherry industry in every way possible. The Willamette Valley is especially adapted to cherry growing. Oregon is famous for its cherries, this state being the originator of three of the best varieties, the Bing, Lambert and Black Republican. There is good money in the cherry business when properly conducted. The Bing and Lambert realize excellent prices under favorable conditions. The Royal Ann bears regularly and heavily and are always in ready demand by the canneries, usually bringing from three to five cents per pound. At these figures the cherry grower can make good money per acre. One cherry grower produced twenty tons from an acre, which he sold at the cannery for three cents per pound, which probably would net him one and one-half cents per pound after paying for the picking, hauling, etc., affording him a net profit outside of cultivation of about six hundred dollars per acre.

Biennial Crop Pest and Horticultural Report.—The Oregon Agricultural Experiment Station has recently issued a large bulletin with the above title, which can be secured on request by mail by any resident in the State of Oregon. This is one of the most excellent and thorough bulletins on the different pests that we have to deal with in the Northwest that has ever been issued. Nearly all of the different pests are described in a very thorough manner. The remedies, sprays, formulas, time of treatment, etc., are all clearly outlined. The bulletin contains over 300 pages, is printed on ex-

cellent paper, handsomely illustrated, containing many fine colored plates of some of the insects and fungi that affect our various kinds of fruits. It contains information about frost prevention, tomato blight, aphis, anthracnose, San Jose scale, gummosis, crown gall, mushroom fungus and diseases of nut crops. In fact this bulletin is so thorough that it clearly covers and gives treatment for nearly every pest and disease with which the orchardist or truck gardener has to contend so far as the Northwest is concerned.

The Nurserymen's Convention.—The National Nurserymen's Association and the Pacific Coast Nurserymen's Association held their first joint convention in Portland, June 17 to 21. It is universally conceded that this was one of the most businesslike and best nurserymen's convention ever held by either association anywhere in the United States. About three hundred Pacific Coast nurserymen and one hundred Eastern nurserymen, many with their families, representing nearly every state in the Union, were in attendance. This was a thorough business meeting and much was accomplished; perhaps the most important thing of interest to the nurserymen and fruitgrowers in general was the action taken in reference to a uniform horticultural law for the inspection of nursery stock in every state in the Union. A committee was appointed to secure copies of all of the laws from all the states, and in conjunction with a consulting body of able lawyers to draw up a general law that would include every feature that was necessary in each particular state, then submit it to the different states with a view to having it adopted by each state. If this is done—and it is the belief of all who were present that it can be done—it would certainly simplify the matter of inspection of nursery stock and be of equal protection and value to both the nurserymen and fruitgrowers.

Co-Operation.—A great many fruitgrowers apparently imagine that after they have formed a co-operative association that they have solved the fruit problem. No co-operation can be a success unless thoroughly co-operative. In the first place an association must have the loyal support of all of its members and the community. Even with this, without the right kind of co-operation along that line the fruit-grower must not look for any great success. In fact co-operation in the fruit industry must be a co-operation at home, the right kind of co-operation with the railroads, the right kind of co-operation with the dealers and the retailers and the right kind of co-operation with the consumer. In other words, the association must co-operate all along the line up to and with the consumer by supplying him with the right kind of fruit, properly packed, properly graded and at a price that is reasonable, so that it will not prevent consumption.



3,000 Stover Gasoline Engines Could Not have been sold in the Northwest

if the Stover Engine had not been a crackerjack of an engine. A few could have been sold through advertising, but the thing that sold more than 3,000 Stover Engines throughout the Northwest is the goodness of the engine. Users of Stover Gasoline Engines do not hesitate to say that the Stover is the best engine on the market. It is this opinion in the minds of the owners that boosts the sale of this engine. Stover Engines have been tested out in every service and have been found wanting in none of them. They have strength sufficient to withstand the hardest knocks of timber service, the accuracy of adjustment demanded in an engine for electric generating, the ease of operation that adapts it particularly to the intermittent service of the farm or pumping. They meet every requirement—are simple and understandable. A single rod operates all important parts. Stover Engines are not of the hair spring type that are thrown out of adjustment at the slightest opportunity; they are of the sturdy, stick-to-it type that you can operate as well and as economically as an expert, and in case of an accident you can in most cases make repairs yourself, same as you would to any other piece of machinery about the place. We carry a complete stock of Stover Engines—sizes 1 to 60 horsepower—and also a complete stock of repair parts. Write us, if interested, for our catalog and circular containing letters from users in all parts of the Northwest.



The Standardization of the Prune Industry.—A general call was issued for a meeting of all the prune growers which took place in Salem, July 3. The meeting was attended by about four hundred men identified with the industry. The plan was to come to a thorough understanding and agreement in reference to the standardization of packing prunes, both fresh and green. Sentiment in favor of proper standardizing of the prime industry was universal and it is to be hoped and expected that this industry will rapidly bring about uniform grading, packing and evaporating rules that will standardize the output. The prune industry is a large one, but during the past year or two lack of proper standardization and some careless processing of the prune has brought the growers to their feet with an avowed intention to eliminate all imperfect work and to better the output in every possible way.

Marketing.—Before last year's apple season was really started the editor of "Better Fruit" realized that the marketing end of the fruit business was the weakest chain in the link. In December he prepared an address entitled "The Marketing Problem of 1912—Its Evils and Remedies," which he delivered upon invitation at the state horticultural meetings in Washington, Idaho and Montana, and at the Provincial Horticultural Assembly of British Columbia. After attending these meetings in the month of January it

was evident that this subject was one of vital interest to the fruitgrower, hence "Better Fruit" has devoted much space to this subject during the past five months, believing that no space used or effort made was wasted. Our only hope is that our efforts in this direction may be so appreciated that the industry as a whole may reap the benefit.

International Apple Shippers' Association

Every mail brings letters commending the plans of the advertising committee. These letters are from every section—Maine, New Mexico, North Carolina, Michigan and Utah are represented, while all other apple-producing states have earnest advocates in great numbers. If each reader will use his influence with other growers and shippers—at the same time setting the good example by stamping his own fruit—there is nothing but success in sight. Let no one imagine that this advertising propaganda will work out while he sits passively watching a few straining at the unequal task. The work requires the loyal, patriotic and active support of many hands—the committee is willing to do its share, yea more than its share, but not if the support of others is lukewarm. It is not enough that you say "good," "keep it up," etc., but everyone should take ad-

vantage of the opportunity to impress on the grower or shipper he meets from day to day the great importance of advertising apples that the general apple business be improved, and particularly impress on him the fact that every stamped package will receive the preference in all markets, thus repaying the shipper immediately and handsomely for his outlay. It is hoped there will be many growers in attendance at the convention of the International Apple Shippers' Association in Cleveland, Ohio, in August. A number have already signified their intention of being there. Why not have a large representative gathering of growers from all sections? The mutual benefits would be great indeed. The advertising committee is now engaged in the task of appointing an advisory board of one hundred influential growers, representing all sections, to act with us in carrying out the plans of the committee. This board will embrace some of the most prominent and up-to-date apple growers in America. We have not yet completed the list and will thank anyone to suggest such names as he thinks would strengthen the committee. Apple history will be written at Cleveland, August 6 to 8. Every man who is not present at the making will ever after feel the rebuke of glorious opportunity lost.—U. Grant Border, chairman advertising committee, 218 Light Street, Baltimore, Maryland.



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because of twenty years' study of the needs of box makers, and the devotion of our entire energy to nails alone, have become well known as the *best* and *cheapest* nails for box purpose.

Our name stands for uniform quality and full count.

Having established this reputation it is our constant effort to maintain, and if possible raise, the standard of excellence that earned it. All other brands of ***so-called*** cement coated nails are ***distinctly inferior*** and are sold on ***our reputation***.

Your own interest requires that you refuse any and every substitute, and demand **PEARSON'S**

Conscientious merchants will not try to substitute the "just as good" kind. ***They know better.***

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Standard Inspection of Nurseries

Mr. William P. Stark, of Stark City, Missouri, before Joint Annual Meeting of the American and the Pacific Coast Associations of Nurserymen, at Portland, Oregon, June, 1913

THE one great consideration that comes home to every nurseryman and every orchardist with great force is the necessity of uniform and systematic inspection—inspection that inspects, inspection that stands for something. It has been on my mind for a long time and doubtless it has been worrying you, but how, that is the one great question, the solving of which would be the solution of our greatest problem today. It will be the solid foundation upon which to construct the nursery business of the future. In selecting the subject of inspection for this article I do not wish to come in conflict in any way with the work which has been done by our committees on legislation, and especially by Peter Youngers of Nebraska. His work speaks for itself. It is the beginning upon which the plans and success of our future action depends. Neither do I wish to be personal or out of order, but I cannot help saying at this time that none of us fully appreciate the actual money saved by the work of Peter Youngers and those who have been with him. As time goes on we will realize the benefits more and more. Every man considers that his own line of work is the hardest, most

difficult and least remunerative business that he knows of. But just the same most nurserymen remain in the business until they are called across the river. Somebody has to grow the fruit trees, and there is a lot of satisfaction in it for those who like the work. The worst feature of the job, the one that spoils more fun than all the rest of our troubles put together, is the present unsatisfactory condition of inspection. Every state has a separate set of distinct laws and requirements. Some are good, some are bad, and no two alike. Nurserymen recognize that we must have inspection; that it is necessary for his success as well as that of any other individual, but that does not imply that we must submit to the present conditions. The Colorado suit, brought by Mr. Reed and put through to a successful conclusion by our committee, headed by Peter Youngers, is the most decided advance that has been made in many years. But we can't "sit tight" and expect Peter Youngers to come to help us every time a foolish law is spread on the statute books.

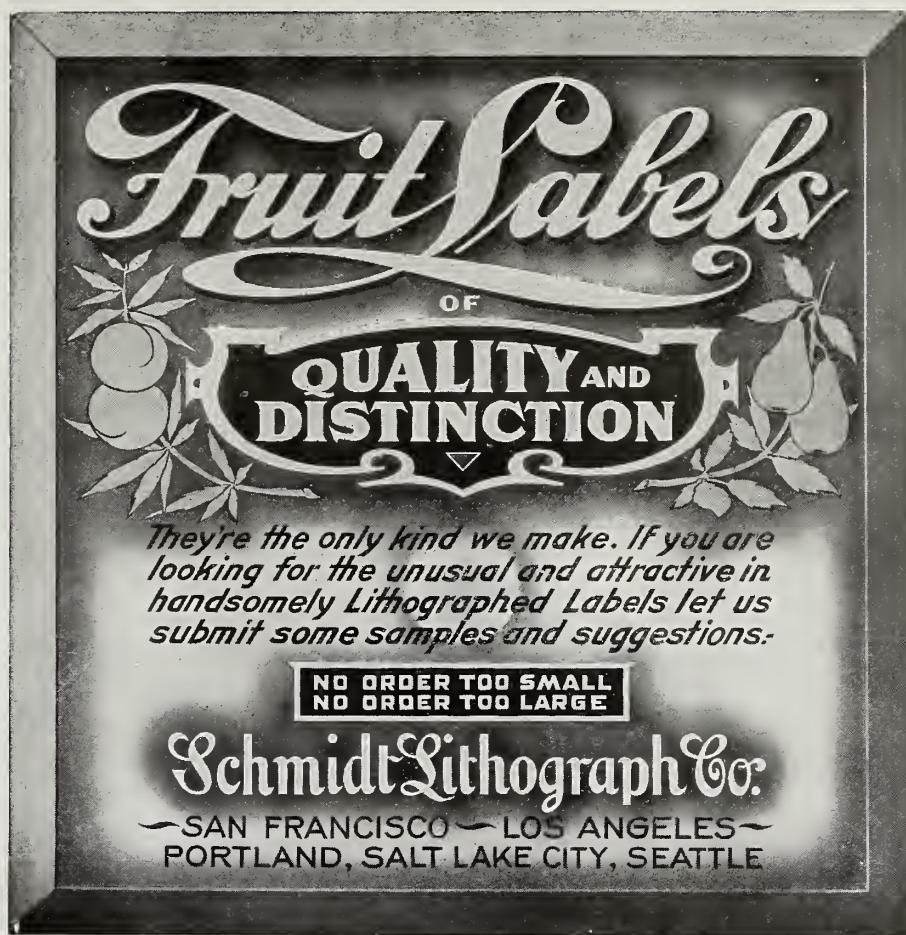
There ought to be some way to get at the whole problem. What we want is thorough, uniform inspection, insofar as inspection is necessary, administered

in a way to eliminate the present loss and delay due to the inspection, and to put the increased cost of conforming to the inspection upon the ultimate consumer, where it properly belongs. We cannot hope to get any degree of uniformity by working through the different nursery and fruitgrowers' associations, trying to get each state to pass a uniform law. It is practically impossible to find any two states with the same requirements. There is no question that the inspection as done under the direction of the state experiment station and state university has certain advantages. Their organizations are the logical ones for the work. It is necessary that every function that can be performed by the states be entrusted to these individual state organizations. No centralized organization is capable of understanding the conditions throughout the country. No central department from one central office is competent to enforce the nursery regulation in a country as large as the United States. It is the same old question of the division of the duties of government between the states and the federal offices. The solution in our case is one utilizing both the state and

federal organizations to secure the desired results.

At present the inspection of nursery stock and orchards, where there is any inspection, is in the hands of the state. As far as the country as a whole is concerned, the conditions are most unsatisfactory. At the same time it is not difficult to imagine what it would be like if the inspection were entirely in the hands of the federal government. It would probably be as unsatisfactory as it is at present, if not more so. But in trying to work out a solution of our troubles we must not lose sight of the fact that it seems necessary to fall back on the federal government to help us. The actual administration of our state laws should be accomplished through the state organization. The individual states must have a voice in the formation of these laws as well as in their administration. The federal department should simply serve as a central office, a clearing house, bringing all the states together under one head, making it possible for them to work in unison. It has been said that the federal department has been overanxious to extend its power and secure an increase in the appropriations made by congress. However, in this case the federal department would simply be the means of bringing all the states together. Having accomplished this, the less the federal department has to do with the local inspection and interstate shipments the more satisfactory the results will be. Our state horticulturists, entomologists and plant pathologists of our various state experiment stations and universities are in closer touch with the conditions in their states than anyone else, and for that reason in position to render better service.

I want to pause here to remind you that inspection is a good thing; that the troubles we have had are not due to inspection, but to the irregularity of the work, and to the many and various requirements that are often unfair and hurtful. Also to remind you that people must have trees, that they must pay the nurserymen the actual cost of growing and selling the trees plus a fair profit. The people must have trees that are inspected. If all trees are inspected alike then the ultimate cost of inspection and the cost of conforming to the law will naturally fall upon the consumer, where it justly belongs. If the inspection were done right—with uniformity and thoroughness throughout the entire country, so that one state would accept, without question, the certificate of inspection from another state, no individual nurseryman would suffer loss unjustly. The increased cost would be taken care of by charging a better price for the trees. The increased cost would be paid by the planter. Instead of greater loss there would be greater profit, because of the elimination of unnecessary risk, waste and uncertainty of the present. Let us for the sake of argument assume that we must have inspection, and to get uniform inspection we must go to the federal government. The next question is just what we want done and how to do it. It is a



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We offer for the coming season the most complete and best selected stock of both FRUIT AND ORNAMENTAL TREES in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

LAYRITZ NURSERIES
Victoria, British Columbia

question that should not go unanswered. We cannot gain anything by putting it off—by delaying the issue. Along these lines I simply want to call your attention to the condition as I see it. I do not know whether it is possible to have a law that would force one state to accept the inspection of any other state, although the present quarantine powers, given by the last congress to the United States Department of Agriculture, makes it possible for the Secretary of Agriculture to quarantine any state or any section of the country he may see fit. However, any form of coercion would not only be unnecessary but harmful. To have thorough and adequate inspection throughout the United States it would be necessary to have the federal aid. If this aid were given in the form of substantial appropriations for carrying on the work it is reasonable to assume that every state would come into an agree-

ment providing for uniform and thorough inspection. If the federal government passed a bill providing a thousand dollars a year for each state and then give as much in addition to this as would be appropriated by each state for carrying on the work in its boundaries, it is safe to assume that every state would agree to adopt the requirements for uniform inspection and accept the inspection certificate of other states.

The success of such an arrangement depends upon thorough work, at a minimum cost, by competent, responsible, fair-minded men. It should be provided that the actual inspection be done under the direction of the state universities and experiment stations, as they have trained workers who understand the conditions of each state. The individual inspectors should be paid good salaries. They should be paid enough to insure getting trained, com-

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(EXTRA FANCY)

"RED RIBBON"

(STANDARD)

Famous Brands
OF
Yakima Apples

GET IN TOUCH WITH US ON

Peaches, Pears, Prunes
NOW READY

Yakima County Horticultural Union

E. E. SAMSON, Manager

NORTH YAKIMA, WASHINGTON

petent and disinterested men. These men should be required to pass a strict examination before qualifying for the work, and their appointment should be entirely free from any taint of party politics. Ten years ago it would have been impossible to secure enough trained men for inspectors, but our universities are turning out thousands of trained men every year and it is now possible to get experts to do this work. The entire success of this arrangement depends upon the thoroughness and fairness of the work done by these inspectors. If every state is to accept the certificate of every other state it is necessary that each individual tree be inspected after it is dug. When the trees are to be inspected individually the best and most economical way is for the inspector to examine the trees after the customer's order is filled, but before it goes into the box for shipment. The inspection can be done at this time with the least expense and the greatest convenience. Each inspector would be able to give more of his time to the actual work instead of traveling a half day to inspect one customer's order which has been delivered by the railroad, then traveling another half day to inspect another small order in another part of the country. Furthermore, having the trees inspected before they are shipped would prevent the disappointment of customers. It would be to the nurserymen's interest because it would do away with the loss, delay and uncertainty of the present method of having the trees inspected after they are shipped to the customers. It should be made possible for an inspector of one state to open up a shipment from another state, from time to time, to insure uniform work being done throughout the entire country. Some nurseries would require the con-

stant attendance of one or more of these inspectors and in other cases, where the nurseries are small, one inspector might divide his time during the season between two or more companies.

I hear somebody say that they don't want an inspector bothering around their place half the year. They don't mind having him there to see their stock, but they don't want an outsider mousing around their packing houses and pulling through their orders. But just stop and think a minute. Isn't it a whole lot better than having some local inspector a thousand miles away turning down an order of your trees because he doesn't know how to inspect or because of unfair discrimination. Even though the trees are shipped back and the order refilled, there has been serious delay and annoyance, to say the least. It is barely possible that some trees went out that should not have gone out. Wouldn't it be better to have them rejected in the packing house before they went to the customer than to have them condemned and rejected after they have been delivered to your customer. You would not only save time and loss but avoid the bad impression created in the customer's mind. Here is the whole thing in a nutshell. We must have inspection. At present the inspection requirements of the country as a whole are bad and unsatisfactory. They are a hardship and injustice to the nurserymen and to the orchardist. They are unjust because they are irregular, ineffective and often unfair. They do not place the increased cost of conforming to the inspection on the customer, but often cause serious loss to the individual nurseryman. The only way to get standardized inspection throughout the United States that would be fair

and place the cost on the customer is to have all states organized and given federal aid, which will insure adequate inspection in every state, and which will insure the acceptance of the certificate of one state by every other state. The only way to do the inspection is in the nursery packing house before the shipments are scattered all over the country, because it is cheaper, better and avoids the delay and loss of having trees condemned after shipment. The question of inspection is our greatest problem to day. If we don't meet it, if we attempt to evade the issue, if we stand still and let someone else bring about the laws the way they think they ought to be, we are going to be disappointed. The only way the nurseryman is going to get improvement that is fair to him is to take an interest in those matters and do his part in working out these problems along with the entomologists, the plant pathologists and the fruitgrowers of America. In making these comments I offer them simply by way of suggestion. While I have tried to state a specific proposition, it is simply to make a definite start. I do not mean that I advocate this particular plan—there ought to be a better one—but I do wish to emphasize the fact that conditions cannot be much worse than they are now, that they are a hardship on the nurserymen and the fruitgrowers, and that we must do something.

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Rated as a Class A School by the Council of Education of the American Medical Association.

Requirements of Admission — A completed approved four-year high school course and, in addition thereto, one year of university work, embracing chemistry, biology, physics and German or French.

Laboratory Facilities — Technical training under full time instructors, six in number, in anatomy, physiology, pathology, chemistry and pharmacology.

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Classes are divided into small groups with the view to more individual instruction and opportunities for internships in the various hospitals are offered the graduates of the school.

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A Select Non-Sectarian Boarding and Day School for Boys. Military Discipline; Small Classes; Men Teachers. Careful supervision secures results that are not attained elsewhere. Send for catalog.

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In the Summer is the Time to Prepare for the Fall Business

GET THE "BLUE BOOK"; check up the firms you want to deal with in the fall; send them some preliminary literature, telling them what you are going to have; how you want to deal; get correspondence started so when the shipping season begins you will be having inquiries for quotations. Confine your dealings to reliable firms; put up your stuff according to certain grades —either those used in the "Blue Book" or those that you may publish and include with your literature; lay the foundation for a full and thorough understanding as to not only how you are going to sell, but the grades that you are going to ship, and if possible, arrange with your customers that if any difference arises which you cannot adjust between yourselves that the matter will be left to the Produce Reporter Company.

BY THIS SYSTEM you will be prepared for all emergencies and in this preparation you will, in fact, *avoid* most of the causes for misunderstandings and difficulties. Besides this you will be equipped to immediately look after the unavoidable cases. The last disastrous season has set a great many Growers and Shippers to thinking very seriously of the marketing problem, and no matter what your conclusions may be on this very interesting question, you certainly need credit information and inspecting and adjusting protection that you can only secure through a Membership in this Organization.

IT WOULD PLEASE US to have you ask for full particulars if you do not thoroughly understand our proposition.

Produce Reporter Company
212 West Washington Street, CHICAGO

Eastern Nurserymen Visit Yakima Valley

I AM asking the Wapato Independent to mail you a copy of their issue of June 26, on the front page of which you will find mention of the fact that Mr. Lavasseur and Mr. Ryker returned to the reservation and bought sixty acres of land, which, as it happens, lie four miles southwest of Wapato. On this you will note the report is that they expect to start an ornamental nursery plant, which, if it is the case, will mean a lot for the Northwest, as these gentlemen represent two of the largest European firms and their entrance into this field as growers will be quite a stimulus to the ornamental nursery business, for they will, as in the past, grow stock particularly adapted to the Northwest and will deal through the regularly established nurseries, thus seeing that their stock is given the widest distribution possible. Taking it altogether, we feel that the nurserymen of the Northwest are to be congratulated on having drawn the national convention to Portland for this year and on the success of the convention, which we believe was a most profitable convention.

Incidentally will say that the Eastern contingent put in a full day in the Yakima Valley. Arrived here on Monday morning, the sixteenth. We gave them an early breakfast, two-hour-and-a-half trip through our nursery, following which, in sixteen cars, we started west over the reservation, noting the splendid development thereon, most of which has taken place during the past five or six years, showing them the beautiful vista of hay land, stock ranches and fruit ranches, spending a half hour at the J. T. Harrah ranch, where they were very much interested in the 510-foot artesian well which

flows about 1,500 to 2,000 gallons per minute. This well was completed by Mr. Harrah June, 1912, and he now waters his entire ranch therewith.

Mr. Harrah is a young, well-to-do Philadelphian, who is developing a sixty-acre fruit ranch and who has sufficient capital and interest to build a beautiful home thereon and to spend considerable money in beautifying his home surroundings, the result of which in one year's time was a marvel to our Eastern friends, whose experience lies largely with old homesteads or cities which have been in the process of building for many years. Leaving the Harrah ranch we drove into Wapato for lunch, following which we turned west and north, crossing the Yakima River near the Sunnyside canal headgates, in which the visitors were greatly interested, as many of them had never before had the opportunity of seeing an irrigating ditch, particularly one of this size, which with its splendid concrete dam across the Yakima River and its large intake has capacity for sufficient water for 90,000 acres, which is the total lands ultimately to be watered by the Sunnyside canal.

From this point to Zillah, a distance of thirteen miles, the route ran through some of the most beautiful orchard lands in the Yakima Valley, in all stages of development—ripe cherries on the trees, orchards loaded with peach, apple and pear, ranchers thinning their trees to prevent the overload and a general air of prosperity on every hand. The visitors had a splendid opportunity of seeing the typical Northwestern orchard from the young, newly-planted yearling type to the fifteen to twenty-year-old tracts which were planted by

the pioneers of Rev. Walden's type, when the canal was first projected. At Zillah they were given a splendid ice cream and strawberry feast in the beautiful home of Walter N. Granger, who is now coming to be appreciated as one of the men who has done as much or more for the lower Yakima Valley than almost any other citizen, he having been connected with the Sunnyside irrigation canal since its inception twenty years ago as a Northern Pacific project, following which it was turned over to the reclamation people when they first entered the valley some ten years since, he having stayed with the Sunnyside project as superintendent until about two years since.

The party was returned to Toppenish in time for a hearty dinner at five o'clock, following which they proceeded to Yakima at six thirty, where they were met by the Yakima Commercial Club and shown over the beautiful Nob Hill fruit district and adjacent land, after which their car was attached to the midnight west-bound Northern Pacific train, they spending Tuesday night in Seattle, arriving at Portland Tuesday night. The sixty-mile drive over the Yakima reservation and the orchard land was, of course, a revelation to them, for it portrayed a phase of development with which most of them were quite unfamiliar. Yours very truly, Washington Nursery Company.

Hood River Grown Nursery Stock for Season 1911-1912

Standard Varieties
Prices Right and Stock First Class

C. D. THOMPSON, Hood River, Oregon

Position Wanted!

By an experienced orchardist with executive ability, as foreman. Temperate and not afraid of work. Understand vegetable growing also. References. Address "W," care "Better Fruit."

Wanted By a good orchard man and general farmer, a position on a large fruit ranch in Hood River Valley or vicinity. Good worker, sober and steady; single and about 35 years old. If man and wife are wanted, my sister can fill the place. Can give best of references. Address "H," care "Better Fruit."

Established at Woodburn in 1863

3 qualities distinguish
Woodburn fruit trees from other
fruit trees:—Perfect health, absolute reliability, moderate price
Grown without irrigation.

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Joint Convention of the National Nurserymen's Association and the Pacific Coast Nurserymen's Association, held June 17-21, 1913, in Portland, Oregon. The Union, and was the greatest nurserymen's convention ever held. One hundred and fifty nurserymen, many accompanied by their wives and families, attended this convention, representing nearly every state in the country. This picture was taken in front of the Multnomah Hotel.



What of the Horticulture of Tomorrow?

Mr. H. W. Kruckeberg, of Los Angeles, California, before Joint Annual Meeting of the American and the Pacific Coast Associations of Nurserymen, at Portland, Oregon, June, 1913

WHAT shall be the future of horticulture is a rather large and elastic question capable of varied treatment from many points of view, and anything that may be said must be more or less speculative and largely based on individual opinion. The subject divides itself into four great divisions, pomology, vegetable crops, floriculture and landscape gardening, any one of which is capable of wide and diverse treatment. For our purpose, however, it may be limited to the ornamental and the economic. Now to talk of the future of our industry is to treat of a thing that has no tangible existence, and if Emerson is correct in the axiom that it is the improbable that always happens, we are certainly in an atmosphere of speculation. Viewed, however, from past experiences and present tendencies, we are permitted to assume the role of the seer

and prophet and shy our easter into the arena of time with the hope that it may hit something that will "pan out." Garden making is largely the result of culture, of means, of leisure and a love for home life. It reaches its highest perfection in the older and more settled portions of the country, with its lessening and vanishing lines on the frontier. Hence, in the West, it is still in the formative stages of development, with every prospect that the demand for decorative plants and a correct taste in planting is to find a stronger and more intelligent appreciation as culture and the love of the arts increase and leisure and means afford. In Southern California no branch of the nursery business has shown more progress or has expanded more rapidly than that of flowering and ornamental plants. This has been made possible by the creation of beautiful homes in

all the valley towns south of the Tehuepi, made by newcomers who have both the means and the leisure to indulge their taste; while north of that line, in the San Joaquin Valley, the business still bulks in fruit trees, until we get into the region of San Francisco Bay, where there is again a demand for the ornamentals. Looking at the question from the viewpoint of the individual, the trend of things clearly indicates that the future of landscape horticulture as applied to West Coast conditions is certainly promising, not only from the nurserymen's point of view but also from the viewpoint of the home and garden beautiful. Indeed much of the West Coast is destined to be a country of homes and gardens, insuring a bright future for the out-of-door life and the love of plants and trees.

When it comes to the subject in its official or political aspects, there is some ground for a negative opinion. Public park designing, street-tree planting, boulevard making, in many towns and counties are more or less tintured with politics. This not only retards a healthy progress but is often disastrous, resulting in bad planning, bad selections of plants, poor planting and a corresponding waste of public money. As a matter of fact park work should be removed from all political considerations. In its management it should represent the highest efficiency and give place to only competent service, which should be under civil service rules and entirely exempt from removal without cause. In this respect there is certainly a wide field for improvement in the horticultural work of the future. Since landscape horticulture is not a matter to be completed in a day, but in future years, intelligent and permanent authority is of the first importance. It would seem that in this direction the intelligent and progressive nurseryman has a vital and important work cut out for him in the fostering and developing of a correct taste in public horticulture endeavor. For certainly to go on in the future as many

municipalities have in the past is not only wasteful but criminal.

In economic horticulture the future will have to do with the market place and the counting room rather than the garden and orchard. The problems of varieties, methods of culture, of irrigation, of harvesting and packing, are pretty well solved, not only with one line of fruit but with nearly all. With the present area of fruit orchards in bearing, to which the future will add a constantly-increasing acreage, the vital point will be distribution and salesmanship. And in this endeavor the dominant note must be co-operation in some form or other. The box of apples, basket of peaches, the crate of oranges has no value in the orchard; it must be sold, and that, too, at a living profit to the producer. But how? That, it seems to me, is the pivotal question for the economic horticulture of the future to solve. It is conceded that the country is strewn with the wrecks of co-operative organizations among producers; but in spite of that, combination and unity of interests is the only solution of the problem in the reaching of distant markets. In some cases special legislation has been enacted, notably in California, Minnesota, Wisconsin and Nebraska, all of which is helpful to organization. The future of economic horticulture will also have to solve the problems of utilizing the by-products of orchard and garden. The culls, the icky-shaped, the warty and insect-injured specimens all possess a value in one form or another. Here, again, more can be accomplished by combination and co-operation than by individual and isolated effort. In Southern California the orange growers, representing an industry of one hundred and fifty to two hundred millions of money invested, where ten to fifteen thousand people cultivate the fruit and about one hundred thousand find employment, shipping out from fifteen to twenty million boxes at a value of from twenty to thirty-five millions of dollars, co-operation has sustained the markets and made the industry a safe commercial proposition. Only in proportion as orchardists make money will the sale of trees be sustained. The discussion of ways and means of co-operating is hardly pertinent to the

subject. The point that interests the nursery industry is the fact that prosperous fruitgrowers stimulate tree growing and tree planting.

The future of horticulture, from the viewpoint of the plant breeder, the student of heredity and environment, of chemistry and geology is still a world for exploration which may yield new surprises and new sources of wealth and production which are now largely a closed book. It is the improbable that often happens, which in the ease of the horticulture of tomorrow, let us hope that it will teach us how to save wear and tear, augment the quality and quantity of our productions, to the end that each and all of us in the future will enjoy more of the comforts of life for our labors and investments.

Canadian Field Peas

It would not be possible to sow Canada field peas in the spring early enough to plow them under and later seed to some other crop. Nor would it have availed much to have seeded them last fall, as the amount of growth they would have made before the frost is very slight, and they will not stand the winter freezing. The only way in which field peas can be used to plow under as a green manure without losing the use of the land for that season is to sow them early in July or August on ground which has already produced a crop that season. If sown in the latter part of July they will make a very considerable growth before freezing weather in the fall, and may then be plowed under.

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Northwest Prune Growers' Meeting

[Special Correspondence to "Better Fruit"]

ON July third a meeting of prune growers was held at Salem, Oregon, known as the Northwest Prune Growers' Meeting. The reason for the title was that invitations had been sent out all over the Northwest and as a result between three hundred and four hundred prune growers gathered at the Salem Armory. And they came from all over the Northwest—from Idaho, Eastern Oregon, Clark County, Washington, and from as far south as Roseburg in Oregon, while the Willamette Valley had many representatives from every county. It is indeed inspiring to attend such a meeting—four hundred men gathering to discuss just one topic, better prunes. Nearly every grower wore a large yellow badge bearing the slogan "Better Prunes." Never before has there been such a meeting of prune growers, and perhaps we could say

never before has the Northwest had such a horticultural meeting when we look at it from this point of view, that this large gathering was interested in just one thing. The meeting was called largely as the result of the conference of the Northwest packers, and it was a movement to bring the packers and growers closer together and to consider how best to raise the standard of our prune output.

To understand why such a meeting is necessary one would need to go into the history of the prune business in the Pacific Northwest. Up to about 1903 this crop went through many vicissitudes. Prunes were planted on all kinds of land and all the varieties in the catalogue were planted, and at that time no one knew how to evaporate and market the crop. There could be only one result from such a combination of

circumstances and that was disaster. From 1903 to 1912 the prune crop as a whole was very satisfactory and the business became well established. In 1911 prices were unusually good and there was a brisk demand for all the prunes in sight. The climatic conditions were not the best for handling the crop and both growers and packers became somewhat careless in their grading, consequently many of the prunes spoiled and large quantities which appeared good were found unfit to eat. As a result there has been a decided reaction. The buyers are not very desirous of obtaining many Northwest prunes, and in order to again win the confidence of the buyer and consumer we have got to change our methods. Our present standard is one of size only. We have got to find some standard of quality for our prunes; and while we are speaking of standards it is well to emphasize that the Pacific Northwest has got to standardize all its fruits and all its fruit packages and markings. In order to see whether or not we could improve the methods of growing the crop and also to decide upon the necessary steps to take in order thoroughly to standardize the product the following program was arranged: 2 p. m., Address of Welcome, Mayor B. L. Steeves; 2:10, Soil Nourishment for the Orchard, Professor L. J. Chapin, United States government soil expert; 2:30, questions; 2:40, Brown Rot and Other Prune Diseases, Professor H. S. Jackson, pathologist Oregon Agricultural College; 3:00, question; 3:10, Can Prunes Be Standardized? Professor C. I. Lewis, pomologist Oregon Agricultural College; 3:30, questions; 3:40, The Drying of Prunes, Mr. O. C. Beall; 4:00, question; 4:10, Marketing Problems, Mr. J. T. Brumfield. General discussion of the above topics to follow.

Before taking up any details concerning the program I wish to state that in securing Mr. B. J. Miles to act as chairman the committee was very fortunate. Mr. Miles kept the speakers within their allotted time and proved to be a very efficient chairman, one who thoroughly understood his business. The success of many a meeting really depends upon an efficient chairman.

Professor L. J. Chapin dwelt on the necessity of better methods of handling



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the soil in the prune orchard. He gave valuable suggestions along the lines of soil fertility and emphasized the importance of the cover crop to the prune grower. He stated that he was located in the Salem vicinity and was there to study conditions carefully. His aim was to take the methods of the successful grower and hand them over to the less successful man.

One of the most valuable and interesting talks of the afternoon was delivered by Professor Jackson. This year the brown rot of the prune is unusually bad—in some cases entire crops have been lost and the damage is pretty general all over the Northwest, consequently the growers are very eager to obtain assistance on this subject. Professor Jackson told under what conditions the brown rot could be expected, emphasized the necessity of destroying the mummied fruit and stated that it would be necessary to spray, perhaps, three times. He stated that the college is now investigating the best methods of control of the brown rot.

Professor Lewis emphasized the lack of common knowledge among the prune men as to the best methods of growing, evaporating and processing. He showed that there is a great need of a thorough investigation in order to find out what standards could be established and outlined methods of procedure in order to work out these standards. Professor Lewis added that the great needs of the prune business were organization, co-operation and standardization, and urged the growers to hold frequent meetings in order to discuss their problems.

Mr. Beall read a most excellent paper on the drying of prunes and gave the audience what he believed to be the best methods for handling this crop. His paper contained many valuable suggestions concerning the technique of evaporation.

Mr. J. T. Brumfield talked from the point of view of the packer and buyer. He emphasized the very unsatisfactory condition that exists at present, showed to what degree there was a lack of confidence among the buyers and urged concerted action on the part of all connected with the prune business to raise the standard of the product.

The time was all too short for the many valuable papers. Not enough time was allowed for discussion and questions, and the growers left all feeling that they would like to have more. Before adjourning a number of resolutions were carried. It was voted to make this an annual meeting at Salem and in the future to devote a whole day, or a week if necessary, to discuss the problems. It was also decided to hold a series of local meetings wherever prune growing is important. This meeting marks a new era, a new epoch, for the prune business. It means that there will be a more friendly feeling between all who are connected with this important business. In the past there has been at times very bitter feeling, a feeling of distrust and a lack of co-operation.

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Prunes and Proper Methods of Packing Them

[Written for "Better Fruit"]

IN my two previous articles I have written on the curing and packing of the Italian prune, which is distinctly a product of Oregon and Washington. The French prune, as raised in Oregon, does not grade as high as a rule, size for size, as it does when raised in California. I do not think that it is on account of soil conditions, but rather climatic, the greater dampness in our and the adjoining state inhibiting so great a formation of sugar, but on the other hand the California prune has an insipid sweetness that the Oregon French prune does not have. In other words, the flavor of our prune is preferable to the California prune, and as the California prune is rapidly diminishing in quantity, and so far as I have been able to learn from causes which so far have resisted remedies and were more marked in 1912 than 1911, and as it appears that the consumptive possibilities of the Italian prune has been about reached, it is worth while to take into consideration the subject of raising the French prune in Oregon and to endeavor by horticultural methods to increase its size. In Oregon we have to contend with the brown rot, which but a very limited portion of California is afflicted with, and then not with the severity that we

have at times. This is more marked in the sweet prunes, French and Silver, than in the Italian, a sub-acid, although the latter is injured to some extent by this disease.

The question that is now before the producer is to provide by law some standardization for all our fruit products—evaporated, canned or fresh packed. This standardizing of our various fruits and merchantable products is both reasonable and absolutely essential if the industry is to be carried on with a profit. The food commissioner figures the amount of water and salt that can be permitted in a pound of butter, of water and meal in a pound of sausage and the lowest cream per cent allowable in milk that is sold, and these things give reliability to the products. The sanitary condition of dairies and the manner of purifying of the milk containers is regulated. The manner of slaughtering and preparing meat products is regulated and supervised by the government, and it imparts tone and character to goods and adds to their commercial value and facility of sale. I was very much surprised in reading an article in the Oregonian of April 30, 1913, by Hector Macpherson on the apple question. He shows plainly where the trouble is, viz., the system of marketing, and especially the preposterous profits of the retailer.

Now what it seems to the writer that the prune growers of the Northwest should do is to subject to proper drying regulations, to have co-operative packing plants, and then when any co-operative concern has established a reputation for quality and honesty of pack they will have a marked advantage in marketing. Some time ago (several years since) I talked with one of my neighbors who was a member of a co-operative packing establishment, and I found that he got a cent a pound more for the better grades of Italian prunes than the packers were paying the growers. This cent a pound is \$400 a carload and is a big addition to the profits of any grower, and if the matter is prudently managed it can be readily financed. No doubt a grower feels better to take his fruit to a packer, sell it and go home with his money in his pocket, but the packer is not in the business for his health; most of them no doubt are honest and honorable men, but there are many ways of cinching a grower and easy ways to do it if the packer is so disposed. What the grower wants, not only in horticultural pursuits but in all agricultural departments, is to be independent and not to be at the mercy of any man. The farmers' union collects from all parts of the world reliable reports and furnishes them to its members. They help to hold up the markets and don't furnish such lying statistics to carry weight, as was published last year in one of our leading papers as to the prune yield of California, so as to depress prices in Oregon.

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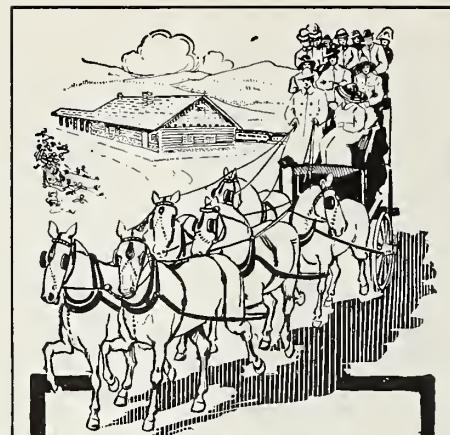
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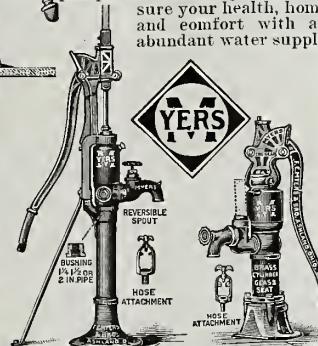
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The marketing question—that is the retail market—is the hard problem. A young man from the neighborhood of Knoxville, Tennessee, who was recently working for me, looking at some prunes I had, which were by no means the best and that I would be delighted to get four cents a pound for, told me that such prunes sold in Knoxville for seventeen and eighteen cents per pound retail. A man from Iowa who had a grocery store told me of buying boxed California prunes at five cents per pound and selling them by the box at eight cents. The grower could not have gotten three cents for those prunes. I heard of a New York man refusing to pay over \$3 a box for pears because he could only sell them for \$1.50 per dozen. This co-operation in handling our various fruit products is essential if the producer, the man at the end of the row, is to have anything worth while for himself. The commission men have to have their per cent, the railroads have theirs, the retailer has his, and if there is anything left the grower has it, but generally speaking he gets the husks and the other man the kernel. But few growers have enough fruit to justify them putting in a packing plant, therefore it must be done by co-operation. The benefits of this course can nowhere be seen to greater advantage than at Puyallup, in Pierce County, Washington. Under the guidance of Mr. Paulhamus a wonderful success has been made in the berry business. While some of the conditions that exist there are unique, the great benefit of such a course is plain. Now for prune growers and shippers of other fruit products to co-operate, standardization of the product is essential. Without that nothing can be done.

A Tribute Earned

The following resolution passed at the recent Nurserymen's convention held in Portland speaks for itself.

WHEREAS, The American Association of Nurserymen and Pacific Coast Association of Nurserymen, meeting in joint convention in Portland, Oregon, June 17 to 20, inclusive, have been recipients of many courtesies and favors, both during the stay in Portland and en route, and desiring to express our appreciation of the same, therefore,

Be it resolved, that a vote of thanks of the joint convention be extended to the following.

To the Portland Floral Society for their generous contribution of flowers and lavish floral decoration of hall and exhibit rooms.

To Mr. and Mrs. Dahlman for flowers sent to the Nurserymen's special car at Missoula.

To the Washington Nursery Company and the citizens of Toppenish, Zillah, North Yakima and Wapato for their generous hospitality.

To the Milton Nursery Company, of Milton, Oregon, E. H. Shepherd, H. S. Galligan and F. H. Stanton, of Hood River, Oregon, the Kennewick Commercial Club, and E. B. McFarland and H. Tabke, of Portland, for the luscious fruits and beautiful roses.

To the bunch of Native Sons of the Golden West hailing from California for the extensive exhibits of fruits and products of their glorious state.

To the Portland ladies for the many courtesies and reception tendered the visiting nurserymen and their wives.

To Dr. A. J. Cook, of California, for his instructive address and "bug" exhibit.

To John Thompson, of the Seattle parks, for his entertaining trip through the parks.

To the trade journals and the Portland press for their generous reports and convention notices.

To the management of the Multnomah Hotel for their liberality and generous hospitality.

LILLY'S

BEST GRADE
Grass and Clover Seeds
99% Pure
For Fall Sowing

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10-acre fruit farm for sale, 1 mile from Creston, B. C.; 7 acres in 1 and 2-year-old apple trees and clover, fenced, large barn and hay loft, running water through property; 2 acres old slashing and 1 acre in timber, an elevated home site. Price \$350 an acre. Also 30 acres of wild land, old stumps, adjoining, from \$120 an acre up; terms. Apply
E. L. TAYLOR, P. O. Creston, B. C.

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A splendid means for supporting heavily laden branches and keeping fruit trees in shape. To provide props is quite a problem in many districts. Yarn is inexpensive, is readily obtained and easily tied. Branches sway naturally and do not chafe as with props. Put up in convenient packages and sold by all dealers selling cordage.

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Portland Wholesale Nursery Company

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We have an extra fine lot of trees to offer this season. Our stock is propagated from selected bearing trees and grown on new clay land.

Write for Prices

F. E. PAYNE CO.
Camas, Washington

To the Oregon Nursery Company for their invitation to luneh and trip through the nursery at Oreneo.

And last, but not least, to the committee of arrangements, whose untiring efforts have made this convention one continual round of pleasure.

Be it further resolved, that these resolutions be spread upon the records of both associations and a copy be furnished to the press and trade journals.

Respectfully submitted, L. J. Farmer, W. G. Campbell, J. M. Charlton, Earl D. Needham, Albert F. Meehan, for the American Association of Nurserymen; H. W. Kruekeberg, Chas. T. Hawkes, Guy M. Pilkington, for the Pacific Coast Association of Nurserymen.

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Third International Congress of Refrigeration

By George W. Hosford, International Refrigeration Congress, Chicago, September 17-30, 1913

THE Third International Congress of Refrigeration is to be held in Chicago September 17 to October 1, 1913. It will be attended by delegates from over forty different countries, from 1,200 to 1,500 foreign delegates alone being expected. There will also be present delegations from the boards of health and aldermen of all the large cities of the East. At the first meeting of this organization, held in Paris in 1906, there were 8,000 people in attendance, and at this meeting a larger attendance is expected than at any previous industrial convention ever held in this country.

The fruit industry of the Northwest should not neglect this opportunity to advertise the superior quality of their fruit. It will be a rare opportunity to meet the trade and the consuming public and to impress upon them their need for this fruit. Much more than any land show and very much more than any exhibition held in the West will

this build up a demand and a market for the fruit.

This will also be an exceptional opportunity for anyone interested in the building or running of cold storage houses to investigate the different types of machinery and of houses. At the meeting of the different sections papers will be presented which will embody the best thought of all countries on questions of refrigeration and its application to foods and the industrial arts. The proceedings of the congress will be printed in five different languages and all delegates will be furnished with a copy in the language he prefers.

The United States Government lends its official sanction to the congress and exhibit and will prepare an exhibit of its own, illustrating the best practice of icing and storing fruit and other food products.

A banquet will be given the delegates at which will be served only such foods and beverages as are customarily held in cold storage. It is proposed to give each guest at the banquet a handsome souvenir menu giving an officially certified history of each article of food served. Northwestern apples held in storage under government experiment will be one of the articles served.

Further information relative to this congress can be secured by writing Mr. E. W. Skinner, 817 Exchange avenue, Chicago, Illinois.

Dynamite vs. Tile Draining

RECENTLY some publicity has been given to an interview with Professor H. C. Ramsower of the College of Agriculture of Ohio State University, in which he is quoted as making the statement that sub-soiling with dynamite costs nearly as much per acre as tiling, and that while the practice works out well enough temporarily, after a few years the soil regains its former condition of pressure upon the lower soil particles and the water begins to collect on the surface, which condition, he states, does not follow tile drainage.

We doubt if Professor Ramsower is correctly quoted, but if so it would ap-

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pear that he is arguing about something for which sub-soiling with dynamite has not been advocated. The use of tile is for a different purpose, and the only use of dynamite which may be compared with that purpose is its use in excavating ditches for draining land that is more or less continuously saturated with excess water and the soil

of which is in an absorbent condition. Under such conditions tile drainage will certainly benefit the land if it is properly installed. In many such cases open ditches dug with dynamite will serve to drain this land, and under such conditions it is much cheaper and quicker than tile drainage. On the other hand, subsoiling with dynamite

is recommended for land that is wet all or part of the time because of an impervious, non-absorbent sub-soil. In fact sub-soiling should never be done in a saturated soil because it fails to crack the sub-soil or make it absorbent, which is the end sought. It is obvious that if a piece of land has an impervious sub-soil, which will neither absorb water nor permit the passage of water through it, tile drainage will not benefit the land but will hurt it, because the only water that will go into the drains is the water from the thin top soil, and while this top soil has too much moisture immediately following rains, part of which should be withdrawn, in drier seasons it lacks sufficient moisture and the tile drains will tend to take away what little it has. By dynamiting this impervious compact sub-soil when it is dry it can be rendered porous to a depth of about six feet and for a radius of about ten feet around each charge, with practically no disturbance of the surface and without throwing the sub-soil up on top. The English have a very good term for this operation, as they call it the establishment of "soil sponges." This increased porosity takes care of excess rainfall on the one hand, and thus prevents surface flooding, and also acts as a reservoir from which the top soil may draw a supply of water by capillarity in dry spells.

In the reported interview Professor Ramsower is made to say that after a few years dynamited sub-soil regains its former condition of pressure upon the lower soil particles. In the first place, the use of dynamite for sub-soiling has not yet existed long enough to show any such results, with the exception of the adobe soils found in some sections of the Southwest, which soil will not stay open after dynamiting, but runs together again as soon as there is a heavy rainfall. Therefore no one is yet in a position to say how soon, if ever, sub-soiling would have to be repeated in order to keep the sub-soil open. The use of dynamite for tree planting goes back more than twenty years and the benefit to the trees is reported as continuous during that period. As this is essentially the same as sub-soiling it would appear that when sub-soiled land is planted with anything that under such favor-

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able conditions would root deeply, the development of these roots and the movement of air and water in the sub-soil will keep it open indefinitely.

Sub-soiling with dynamite is no mysterious performance. It is simply a logical extension of the operation of plowing or cultivating. Every farmer knows the necessity of keeping his soil open to as great a depth as possible. Before the introduction of sub-soil plows or deep tillage machines the greatest practical depth of cultivation was about eight inches. With such machinery it is possible, although difficult, to cultivate to a depth of eighteen inches; with dynamite the soil can be cultivated to a depth of about six feet, and this cultivation furnishes a means of regulating the moisture supply of the top soil and also makes available tons per acre of natural plant food contained in the sub-soil. As every agriculturist knows, water is the chief plant food, and the idea of drainage regulation is not the removal of water in a general sense, but the control of it to prevent on the one hand too much water around the roots of growing plants and on the other hand too little water. Dynamite has been proved very clearly to be a most valuable regulator of soil moisture and it is important that farmers, agriculturists and teachers of agriculture clearly understand just what is claimed for it and what it has been proved it will do.—Contributed.

Marketing Conference Report

The report of the first conference on marketing and farm credits held in Chicago, April 8, 9 and 10, is now ready for distribution. It contains in full all the addresses presented at this remarkable meeting and a complete stenographic report of the discussion. A complete list of the accredited delegates is included for reference. Without doubt this is a most comprehensive presentation of the important problems connected with the marketing and distribution of farm crops and the institution of a farm-credit system. The best thought of the leaders in all educational and industrial lines is set forth in a most interesting way. The book should be in the hands of every producer and every consumer and every reference library in the United States and Canada. Without doubt the program presented at this conference was the most thoughtful and most carefully considered in the history of similar gatherings. The best informed and the brightest men in the country were in attendance and took an active part in the discussions.

These proceedings will be a splendid help to everyone interested, and who is not? A copy of this report can be secured by sending one dollar to the secretary of the First Conference on Marketing and Farm Credits, 1408 Steger Building, Chicago. Every farmer, grower, market gardener, live stock raiser, in fact everyone should inform themselves on these important topics.

YOUR aim has always been *better fruit*—improving the quality and pack until you have finally attained a high standard. Now isn't it time for you to seek a *Better Outlet* for this fruit—time to improve the marketing of your crop as well as the quality? Years of striving have resulted in *better fruit*; now let us give you

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"Horticultural Laws"

Mr. George C. Roeding, of Fresno, California, before Joint Annual Meeting of the American and the Pacific Coast Associations of Nurserymen, at Portland, Oregon, June, 1913

ACURSORY glance at the program which is to be presented to this convention carries the conviction that the great problem, which our nurserymen are up against today, is the complexity of our horticultural laws. I must confess that the subject is one which is deserving of all the serious consideration that this program intimates it should have, for if there is any line of business which seems to be seriously affected by our horticultural laws it is that of the nurserymen. We attend these conventions for the purpose of getting in closer touch with one another; to obtain new ideas in order to more intelligently conduct our busi-

ness affairs along progressive lines, and encourage our people to build finer homes and surround them with beautiful trees, flowering plants and luscious fruits, to make this great world of ours a better and more congenial place to live in.

This beautiful City of Portland and the country adjacent to it is a fitting example of the nurserymen's capabilities to make a place a delight and a pleasure to live in. A walk through these streets, lined on each side with stately trees, and a glimpse of the gardens filled with their wealth of beautiful roses and their variety of shrubs and evergreens, is convincing proof that the nurserymen fully appreciated the soil and climatic possibilities of this section and introduced, propagated and disseminated this great variety of horticultural products, one of which has made this city famous the world over as the "City of Roses." Every year its fame is being added to by its magnificent display of roses and its annual Rose Festival. We pioneer the way, so to speak, in our efforts to introduce new varieties of fruits and ornamentals, and it is largely the result of our investigations that such conditions as are to be seen right here are brought about.

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I will venture to say that there is not a nurseryman present here today who has not often concluded in his own mind that there was evidently a misunderstanding of his efforts to advance the interests of horticulture, particularly when every new law which is enacted seems to have for its sole purpose restrictions which prevent him

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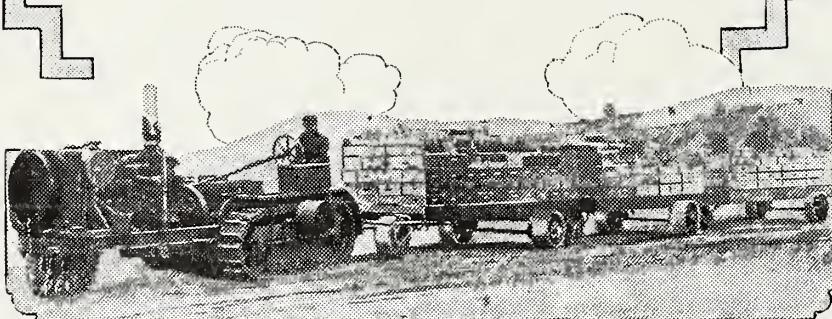
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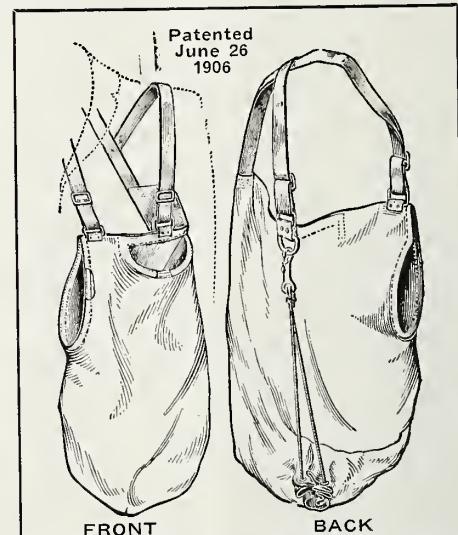
from building up and enlarging his business, not only within the confines of his own state but in other states as well. Not one of us will deny the necessity of horticultural laws as the business of fruit growing progresses along commercial lines, providing they are so framed as not to work any greater hardship on the nurserymen than they do on the fruitgrower. It is safe to say that practically all the horticultural laws which are in operation today place more restrictions on the nursery interests than on any other class of men engaged in horticultural work.

The serious question which presents itself for our consideration is, how are

we to overcome this state of affairs and bring about a better understanding between the nursery interests of the country and the other branches of horticulture. To come here and heap abuse on our horticultural laws and the men who enforce them will avail us nothing, and the citing of individual cases of unjust treatment does not correct the error or bring about a solution of the problems which confront us. Some other plan of procedure must be devised, and as it is quite apparent that we are the primal cause for the horticultural wealth of the country, that if we wish to continue in business, go on widening our scope of operations and soar higher in the line of progress, we

must eliminate many of the obstacles which now impede our path. It is quite evident that if the nurserymen desire to have their interests taken care of it will be necessary to present their side of the case and co-operate with the authorities and the legislative part of the government to see that the laws which are enacted protect and do justice to all interests concerned along lines of equity. If we scrutinize even casually these numerous and diverse interests we soon learn that the subject is fraught with perplexing problems of a legal as well as of a practical nature. The American system of government, being divided up into federal, state, county and municipal legislative bodies, each with the power to regulate its own affairs, presents questions of constitutional law that must be considered. This is aptly illustrated in California, where a change in control will be more difficult to bring about than in any other state in the Union.

There each county has the power to enact its own legislation to protect its interests; and the consequence of this is that we have as great a variety of horticultural laws as there are counties in the state. All of which keeps the nursery business in an atmosphere of doubt and apprehension in respect to all inter-county shipments, for to keep in touch with all these local ordinances is no small job and requires constant vigilance to prevent serious misunderstanding in the making of the shipments. Efforts have been made repeatedly to have this complicated condition



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of affairs corrected by placing the entire operation of the horticultural laws in the hands of the state authorities, for there is no question if this could be accomplished many of the annoyances and difficulties with which the nurserymen must now contend would be removed. There would be no conflict between the counties because the enforcement of the laws would be through officials appointed by the state commissioner, and where special legislation was required to protect certain districts from the invasion of a pest or a disease he would exercise his authority in such cases. The state law as it exists today affords all the necessary protection for the fruitgrower and nurseryman, and there is no complaint against it, but the very fact that our Board of Supervisors have legislative powers places them in the position to enact laws of their own to protect the fruit interests of their respective counties. In many instances their ordinances are extremely drastic in their application, inasmuch as they go so far as to prohibit the shipment of stock from one county to another on the assumption that a pest is known to exist in a certain county or in a district comprising a number of counties a line of demarcation is often drawn describing such a district and absolutely prohibiting the movement of any nursery stock into an adjoining county even if said stock is not infested. This is a manifestly unjust law and actually jeopardizes the business of a nurseryman and in many cases causes heavy financial losses. How to overcome this condition of affairs is a problem which the nurserymen have been up against for a great many years in California, and they are no nearer a solution now than they were before. In spite of the fact that our attorney general has declared that a law which prohibits the movement of stock on the presumption that it might be infested to be unconstitutional and that our courts have rendered decisions substantiating this opinion, compelling the supervisors in several counties to pay damages for destroying nursery stock, these laws still continue to be enacted. As one of our university professors aptly stated at a fruitgrowers' convention, the legality of the laws might well be questioned, but the fact that they were effective solved

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the problem after all. To carry a case into court for a decision of legality carries with it objectionable publicity and much time and expense; therefore our nurserymen have usually compromised matters as best they could and worked under the laws as closely as possible. The only possible solution to prevent the counties from passing ordinances to regulate the shipments of nursery stock is by a state law removing the prerogatives of the counties in exercising any authority in the operation of horticultural laws, but the objection of the counties to relinquish this authority and the fact that the County Commissioners are paid out of the county funds have made it utterly impossible to have such a law enacted.

The same conditions prevail in state legislation. The laws of no two states are quite alike, so there is the same trouble, not only in their legal phases but also from an utilitarian point of view; as witness the Reed case in Colorado, where the state law was practically set aside and declared unconstitutional. These conditions are not only a reflection on the law-making power of the counties and states, an exasperation to the development of the business, but an indication that with modern methods of distribution and interstate business the function of the horticultural inspection, regulation, disinfection and quarantine are in the very nature of the situation a federal function and should apply to the county at large, and not be confined to municipal, county or state lines. Uniformity in horticultural legislation is an essential to be desired not only by nurserymen but by fruit and vegetable growers, fruit packers and shippers. How shall it be obtained is the momentous question.

As horticultural production increases and interstate business in horticultural products doubles and quadruples—as it surely will in the next four years—some system will have to be devised that will expedite business instead of restraining it, as is now often the case. Here certainly is an opportunity for this dual convention to take hold of a big and vital question which, if successfully solved by 1915, (when the country is to undergo an industrial revolution by reason of the Panama canal), will be of inestimable value to the horticultural industries of these

United States. It is useless to postpone action in this matter further, for we all appreciate how deeply it probes into the ultimate success or failure of our business operations. Will we sit idly by, reciting our troubles again and again, without devising a working plan to handle the situation or will these two organizations get together, use their power and intelligence to grapple with the situation, and arrive at some definite plan of procedure? It is up to us to find the point of commencement. Federal control would, in my opinion, be most acceptable to all concerned, but this is beyond our reach for the present. Let us find a plan to unify the states first and have them decide on uniform legislation; this once accomplished, there should be no difficulty in having the state commissioner in each state agree on a plan of co-operation with the federal horticulture board in the handling of interstate shipments. Immediate and prompt action should be the watchword in the prosecution of this most important matter. To procrastinate means that within a very short time counties in other states outside of California will conclude that they require special legislation to protect their individual interests, and when this occurs the situation will be so complicated that it will be beyond solution.

Here, indeed, is a field for the nurserymen to exercise intelligent endeavor and to show statesmanship. Legislation that shall prove to be legal, that will conserve the interests of all concerned, that will facilitate the rapid exchange of all horticultural products with the least restraint and friction are the essentials that we must have and for which we must fight. I hope that this convention will not adjourn without action and that a committee of representative nurserymen, covering all sections of the country, will be appointed to devise some plan of action and report to the convention before adjournment. The liberal policy which the United States has adopted toward foreign countries dealing with quarantine matters might well be followed by them. The continent of Europe, Australia and South Africa absolutely prohibit the shipment of nursery stock from the United States, and there is no reason why this government should

not have retaliated on account of this unjust discrimination. Had such action been taken by the United States government it would have worked untold hardship on the nurserymen of Europe, for the importation of nursery products amounts to several millions of dollars annually. When it is borne in mind that almost every dangerous insect pest that has interfered and retarded our horticultural development has had its origin in foreign countries, our European connections have good reason to congratulate themselves that this government was so liberal in framing its national quarantine laws.

While traveling in Europe last year I made it a point to visit the markets in many of the leading cities of Germany, France, Holland, Belgium, Switzerland and England and was surprised to notice the amount of scale-infested fruit which was handled and that apparently no effort was made to keep it out. The enlightened policy which the United States government has adopted in admitting stocks from Europe should be carefully considered by our European horticulturists and they should bring pressure to bear on their respective governments to rescind the edict which is now in force, otherwise

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the time may arrive when this government may see fit to enforce similar restrictive measures. It is not necessary for me to dwell on the fact that our European friends would be the greatest sufferers should this occur. In conclusion I wish to emphasize the fact that the horticultural wealth of this country will only be built up by the interchange of our products, and although every reasonable precaution for the protection of our horticultural interests should be followed, the same spirit of justness and fairness to all interests concerned should be observed, whether the shipments be of an international, inter-state or inter-county character.

The Fall Fairs

Below we print a list of the county fairs to be held in the Northwestern States, and the principal expositions, fairs and exhibits of the United States and Canada.

Oregon

Sep. 8-13—Umatilla County Fair, Pendleton.
Sep. 9-13—Jackson County Fair, Medford.
Sep. 16-20—Multnomah County Fair, Gresham.
Sep. 18-20—Benton County Fair, Corvallis.
Sep. 23-26—Lincoln County Fair, Toledo.
Sep. 24-26—Linn County Fair, Scio.
Sep. 24-27—Clackamas County Fair, Canby.
Sep. 24-27—Lane County Fair, Eugene.
Sep. 26-27—Columbia County Fair, Yankton.
Sep. 29-Oct. 4—Oregon State Fair, Salem.
Sep. 29-Oct. 4—Wallowa County Fair, Enterprise.
Oct. 1-3—Gilliam County Fair, Condon.
Oct. 2-5—Clatsop County Fair, Gearhart Park.
Oct. 7-11—Grant County Fair, John Day.
Oct. 8-11—Wasco County Fair, The Dalles.
Oct. 9-11—Sherman County Fair, Moro.

Washington

Aug. 25-30—Southwest Washington Fair, Chehalis.
Sep. 8-13—Clark County Fair, Vancouver.
Sep. 8-13—King County Fair Association, Seattle.
Sep. 9-12—Stevens County Fair Association, Coville.
Sep. 10-13—Olympic Fair Association, Port Townsend.
Sep. 15-20—Washington State Fair, North Yakima.
Sep. 15-21—Spokane Interstate Fair, Spokane.
Sep. 22-27—Walla Walla County Fair, Walla Walla.
Sep. 23-27—Snohomish County Fair Association, Snohomish.
Sep. 24-26—Tekoa Harvest Festival, Tekoa.
Sep. 30-Oct. 5—Western Washington Fair, Puyallup.
Oct. 1-3—Rosalia.
Oct. 2-3—Chesaw.
Oct. 6-11—Whitman County Fair, Colfax.
Oct. 7-10—Wilbur Fair, Wilbur.
Oct. 14-17—Davenport.
Oct. 15-18—Goldendale.
Oct. 20-21—Oakeside.

Idaho

Sep. 8-15—Clearwater County Fair, Orofino.
Sep. 17-19—Grangeville Border Days, Grangeville.
Sep. 17-19—St. Maries Fair Association, St. Maries.
Sep. 20-23—Preston Park and Fair Association, Preston.
Sep. 22-27—Idaho Intermountain Fair Association, Boise.
Sep. 23-27—Latah County Fair Association, Moscow.
Sep. 25-27—Bonner County Fair, Sandpoint.
Sep. 29-Oct. 4—Lewis and Clark Fair, Lewiston.
Sep. 29-Oct. 4—Canyon County Fair, Caldwell.

Montana

Aug. 25-29—Interstate Fair, Bozeman.
Sep. 9-11—Carbon County Fair, Bridger.
Sep. 9-12—Powell County Fair, Deer Lodge.
Sep. 9-12—Park County Fair, Livingston.
Sep. 10-12—Custer County Fair, Miles City.
Sep. 11-13—Jefferson County Fair, Whitehall.
Sep. 16-18—Blaine County Fair, Chinook.
Sep. 17-19—Dawson County Fair, Glendive.
Sep. 18-20—Madison County Fair, Twin Bridges.
Sep. 22-27—Montana State Fair, Helena.
Oct. 1-4—Sanders County Fair, Plains.
Oct. 1-4—Ravalli County Fair, Hamilton.
Oct. 2-4—Flathead County Fair, Kalispell.
Oct. 2-4—Deer Lodge County Fair, Anaconda.

British Columbia

First Circuit—
Sep. 3—Cobble Hill.
Sep. 16-18—Nanaimo.
Sep. 17—Alberni.
Sep. 17—Islands.
Sep. 18-19—Comox.
Sep. 19—Sooke.
Sep. 19-20—Cowichan.
Sep. 22-27—Victoria.
Oct. 3-4—North and South Saanich.

Second Circuit—

Aug. 30-Sep. 6—Vancouver.
Sep. 12-13—North Vancouver.
Sep. 17-19—Central Park.
Sep. 19-20—Delta.
Sep. 19—Coquitlam.
Sep. 23-24—Mission.
Sep. 24-25—Maple Ridge.
Sep. 27—Burquitlam.
Sep. 29-Oct. 4—New Westminster.

Third Circuit—

Sept. 11-12—Kent.
Sep. 13—Abbotsford.

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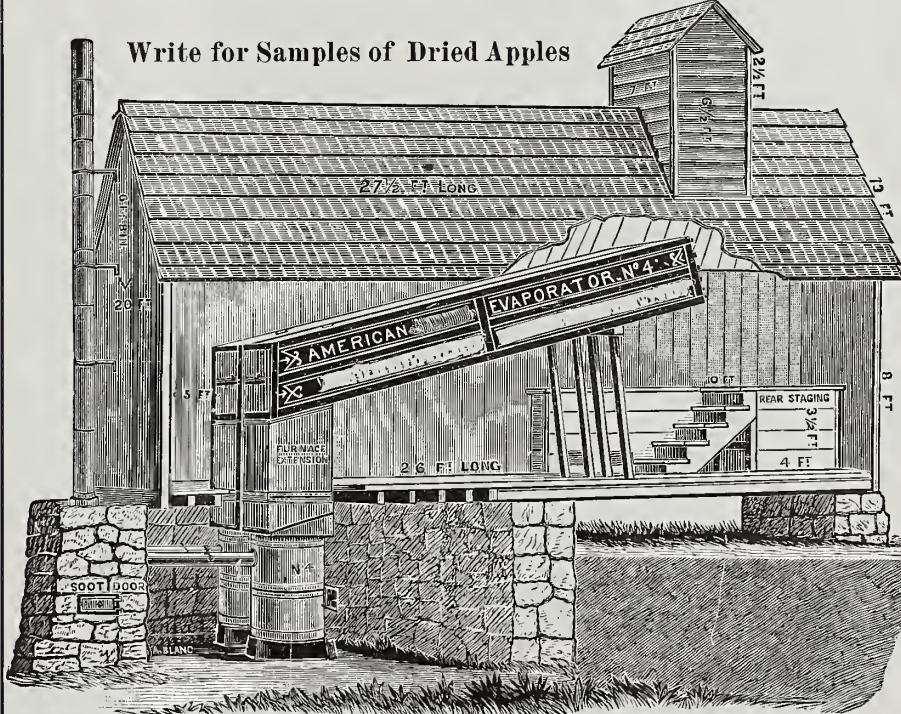
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Inland Seed Company	Spokane, Washington
Plough Hardware Company	Wenatchee, Washington
Rogue River Fruit and Produce Association	Medford, Oregon
C. J. Sinsel	Boise, Idaho
Yakima County Horticultural Union	North Yakima, Washington
Zillah Fruit Company	Zillah, Washington
Provincial Fruit Inspector	Vancouver, B. C.

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Sep. 16-17—Chilliwack.
 Sep. 18 — Aldergrove.
 Sep. 23 — Surrey.
 Sep. 24 — Langley.
 Sep. 25-26—Matsqui.
 Sep. 26-27—Richmond.
 Fourth Circuit.
 Sep. 23-24—Salmon Arm.
 Sep. 24-25—Kamloops.
 Sep. 22-24—Kelowna.
 Oct. 8-9—Armstrong.
 Oct. 27-28—Penticton.
 Oct. 29-31—Summitland.
 Nov. 4-7—Okanagan Valley Apple Show.
 Fifth Circuit—
 Sep. 1-3—Windermere.
 Sep. 5-6—Golden.
 Sep. 10 — Nicola (Merritt).
 Sep. 16-17—Trail.
 Sep. 16-18—Revelstoke.
 Sep. 18-19—Cranbrook.
 Sep. 20 — Crawford Bay.
 Sep. 23-25—Nelson.
 Sep. 25-26—Grand Forks.
 Sep. 30-Oct. 1—New Denver.
 Oct. 2-3—Arrow Lakes.
 Oct. 7-8—Greenwood.
 Oct. 14-15—Kaslo.
 Sixth Circuit—
 Aug. 20 — Enderby.
 Sep. 16-17—Fort George.
 Sep. 19 — Quesnel.
 *Sep. 8-20—Graham Island (Lawn Hill).
 Sep. 20 — Elk Valley.
 Sep. 24-26—Northern British Columbia (Prince Rupert).
 Sep. 30 — Bella Coola.
 *Sep. 30-Oct. 15—Bulkley Valley.
 *Between these dates.

British Columbia Government Exhibits

Aug. 4-9—Saskatoon, Saskatchewan.
 Aug. 23-Sept. 6—Toronto, Ontario.
 Sep. 5-13—London, Ontario.
 Sep. 5-13—Ottawa, Ontario.
 Nov. 20-Dec. 8—United States Land Show, Chicago.

United States and Canada

Aug. 11-16—Blue Grass Fair, Lexington, Ky.
 Aug. 18-22—Cambridge Valley Fair, Cambridge, N. Y.
 Aug. 20-28—Iowa State Fair, Des Moines, Iowa.
 Aug. 23-Sep. 2—Provincial Exhibition, Quebec, Canada.
 Aug. 23-Sep. 8—Canadian National Exhibition, Toronto.
 Aug. 25-30—Forest County Livestock and Fair Company, North Randall, Ohio.
 Aug. 26-29—Hardin County Fair, Kenton, Ohio.
 Aug. 27-28—Standstead County Agricultural Exhibition, Ayers Cliff, Quebec.
 Aug. 30-Sep. 6—Canada Great Eastern Exhibition, Sherbrooke, Quebec.
 Sep. 1-Nov. 1—National Conservation Exposition, Knoxville, Tenn.
 Sep. 1-5—Montgomery County Fair, Dayton, Ohio.
 Sep. 1-5—Nebraska State Fair, Lincoln, Neb.
 Sep. 1-5—Ohio State Fair, Columbus, Ohio.
 Sep. 1-6—Minnesota State Fair, Hamline, Minn.
 Sep. 1-6—West Michigan State Fair, Grand Rapids.
 Sep. 2-6—Maryland State Fair, Timonium, Md.
 Sep. 5-13—Central Canada Exhibition, Ottawa, Ont.
 Sep. 5-13—Western Fair, London, Ont.
 Sep. 6-12—Northern Illinois District, Streator, Ill.
 Sep. 6-12—South Dakota State Fair, Huron, S. D.
 Sep. 8-12—Indiana State Fair, Indianapolis.
 Sep. 8-12—Kansas State Fair Association, Topeka.
 Sep. 8-12—Van Wert County Fair, Van Wert, Ohio.
 Sep. 8-12—Wisconsin State Fair, Milwaukee.
 Sep. 8-12—West Virginia State Fair, Wheeling.
 Sep. 8-13—New York State Fair, Syracuse.
 Sep. 9-11—Brome County Agricultural Exhibition, Brome Quebec.
 Sep. 9-12—Shelby County Fair, Sidney, Ohio.
 Sep. 9-Oct. 4—Alabama State Exposition, Montgomery.
 Sep. 13-20—California Agricultural Society, Sacramento.
 Sep. 13-20—Kansas State Fair, Hutchinson.
 Sep. 15-20—Colorado State Fair, Pueblo.
 Sep. 15-20—Interstate Livestock Fair Ass'n, Sioux City, Ia.
 Sep. 15-20—Kentucky State Fair, Louisville.
 Sep. 15-20—Michigan State Fair, Detroit.
 Sep. 16-19—Fairmount Fair, Fairmount, W. Va.
 Sep. 16-19—Northern Ohio Fair, Willoughby, Ohio.
 Sep. 16-19—Vermont State Fair, White River Junction.
 Sep. 16-19—Walworth County Fair, Elkhorn, Wis.
 Sep. 16-19—Allen County Fair, Lima, Ohio.
 Sep. 16-20—Defiance County Fair, Hicksville, Ohio.
 Sep. 22-27—Interstate Livestock and Horse Show, St. Joseph, Mo.
 Sep. 22-27—Tri-State Fair & Exposition, Memphis, Tenn.
 Sep. 23-26—Cuba Fair and Races, Cuba, N. Y.
 Sep. 23-26—Interstate Fair, La Crosse, Wis.
 Sep. 23-Oct. 4—Oklahoma State Fair, Oklahoma City.
 Sep. 27-Oct. 3—Missouri State Fair, Sedalia.
 Sep. 29-Oct. 3—Interstate Fair, Trenton, N. J.
 Sep. 29-Oct. 4—Tennessee State Fair, Nashville, Tenn.
 Sep. 29-Oct. 4—Utah State Fair, Salt Lake City.
 Sep. 30-Oct. 3—Southern Michigan State Fair, Benton Harbor, Mich.
 Sep. 30-Oct. 3—Wyoming State Fair, Douglas, Wyo.
 Sep. 30-Oct. 3—Provincial Exhibition, New Westminster, B. C.
 Oct. 3-11—Illinois State Fair, Springfield.
 Oct. 6-11—American Royal Livestock Show, Kansas City, Mo.
 Oct. 6-11—New State Fair, Muskogee, Okla.
 Oct. 6-11—Virginia State Fair, Richmond.
 Oct. 7-10—Coshocton County Fair, Coshocton, Ohio.
 Oct. 8-Nov. 2—Arizona State Fair Commission, Phoenix.
 Oct. 9-18—Alabama State Fair, Birmingham.
 Oct. 14-17—Hagerstown Interstate Fair, Hagerstown, Md.
 Oct. 18-Nov. 2—Texas State Fair, Dallas, Tex.
 Oct. 20-25—Mississippi-Alabama Fair and Exhibition, Meridian, Miss.
 Oct. 20-25—North Carolina State Fair, Raleigh, N. C.
 Oct. 21-31—Georgia State Fair, Macon, Ga.
 Oct. 28-Nov. 7—Mississippi State Fair, Jackson, Miss.
 Nov. 1-16—Texas Cotton Palace Association, Waco, Tex.
 Nov. 5-12—Louisiana State Fair, Shreveport, La.
 Nov. 22-29—National Feeders and Breeders' Show, Fort Worth, Tex.
 Nov. 29-Dec. 6—International Livestock Exhibition, Chicago.
 Dec. 8-13—Pacific International Livestock Exposition, North Portland, Oregon.
 Jan. 19-24—National Western Stock Show, Denver, Colo.

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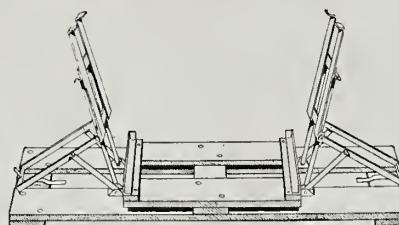
COR. BATTERY ST.

Choice Varieties, Etc.

Continued from last issue

A gentleman from Wenatchee: I think if we would plant according to localities it would be much better. I would like to have Mr. Huntley give his ideas on the questions for the different localities.

Mr. Huntley: In an offhand way, if I were going to select a list of varieties for Wenatchee or Yakima, I would put the Winesap first. The Winesap is the standard. It is like wheat—you have all winter and all summer, practically, to market it. You raise a very fine Spitzenberg over there, too. I would not plant largely of Spitzenberg, but I would not leave it out. On the higher, heavier lands I would plant the Yellow Newtown in your section. Down near the river, in the sandy soils, I would not plant the Yellow Newtown, but would plant the Rome Beauty and on your better soils I might plant Grimes Golden. And I would plant Ben Davis. Some of the Wenatchee people, to my personal knowledge, have made a lot of money out of the Ben Davis; as well in other sections of the state they have made money. You take a warm locality and you can grow a first-class Ben Davis. And a Ben Davis has a place. It is a variety that requires a long season. And there is a demand for the Ben Davis. Some of the best money, some of the most profit that has been made by some of the growers of this state has been made out of the Ben Davis. It has a place. We had a meeting here in Spokane a few years ago and some person took exception to the Ben Davis. The Ben Davis man, speaking, said: "I don't raise Ben Davis apples to eat; I raise them to sell." He said: "I sell my Ben Davis and I buy good apples to eat at home. And as long as there is a demand for Ben Davis I am going to supply it." He felt kindly toward the Ben Davis because it had lifted a heavy mortgage off his farm. I would not recommend planting largely of Ben Davis, but it has a place. And there is no better locality to grow the Ben Davis than the country along the Columbia River in the vicinity of Wenatchee, and near the Columbia River on some of those tributary streams. And it is a pretty good apple when you come to use it in the kitchen. The Stayman Winesap is an excellent apple, and to my taste is a better apple than the old standard Winesap, but it is off color. It has a rusty, rather unattractive color. It grows large in size. It is an excellent apple and is in favor with those who have raised it. There are a number of apples that grow first class in the Wenatchee country that won't do well anywhere else without the same conditions. I might mention the Canada Red as an example. The Hubbardson is another one. These are special varieties. They are in demand where they are known. I know of growers who produced these varieties that have standing orders year after year for all they can raise at a good, fancy price. There



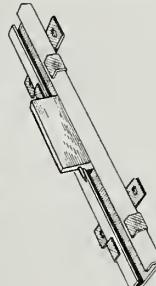
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are quite a number of varieties that are suited to a special demand, and if anyone can cater to a special demand there is money in it. And if you will raise any of the choice varieties, and raise varieties first class, there is no doubt but what you can get a special demand on anything. But then comes another question, and that is, how will they yield; are your conditions right? There are some varieties that are shy bearers; the Spitzenberg is one of them. Unless you can get a fancy price for a Spitzenberg apple it is not profitable. And I understand all the Wenatchee Spitzenbergers are fancy. They cannot be excelled; that is true.

Mr. Day: I would like to have you say something about the Delicious that we hear so much about.

Mr. Huntley: The Delicious is another special variety that has not been tried out sufficiently in all localities. In the warmer valleys it does well and colors well. It is not apt to be a good color in some of the cooler sections on heavy soil. The Delicious is a fairly good apple here and west of the mountains, but it does lack color. I have yet to find the Delicious as good in quality on heavy soil in cool locations as it is in the warmer sections. For the Wenatchee district and down along the river in the Methow Valley until you get up close to Twisp, where your season is not as long, it is all right.

Mr. Pope: How about the Winesap?

Mr. Huntley: The Winesap ought to do well. The Winesap is inclined to grow small if your soil is not good.

Mr. Pope: Is it soil that makes your Winesaps grow?

Mr. Huntley: Yes, it helps. Of course you can increase the size of your fruit by properly thinning. And you all have to do that everywhere with a Winesap; with the standard Winesap you have to thin your fruit. You ought to do that anyway with any variety that tends to over-bear. You ought to thin your fruit, whether your trees are over-bearing or not. If you have a very good crop you ought to thin them. It helps to encourage the promotion of fruit buds for annual crops, and what we want is first-class fruit and annual crops of every variety.

Another gentleman: How about the varieties of apples in this vicinity?

Mr. Huntley: If I were growing the very best apple to my taste I would grow the Wagener. I would grow the Rome Beauty and the Jonathan. The Jonathan, of course, is an early apple, and you have to get it on the market in October or not later than November. It is a good apple later than that, but, mind you, if an apple has a limited keeping period you can't get as much for it as the time approaches for it to go out of season. If you have a long season ahead of you, you can command a price, but you have got to unload to save yourself and the markets.

Another gentleman: Isn't the Wagener an every-other-year bearer?

Mr. Huntley: Well, the Wagener is a good deal like the Spitzenberg—it has a habit a good deal like the Spitzenberg. But I know trees of Wagener

that are pretty fair annual bearers. It is not as persistent a bearer as the Winesap or Jonathan. The Jonathan is an annual bearer.

The gentleman: Isn't the Jonathan a better keeper from an elevation than in the valley?

Mr. Huntley: It is. In the Yakima Valley the Jonathan is almost a fall apple.

The gentleman: What about the upper Columbia, where they do not irrigate?

Mr. Huntley: There are some places on the upper Columbia where the conditions are very warm and favorable to growing some of these varieties that I have mentioned that grow in the Wenatchee country. But I have found this in Stevens County—your sub-soil is cold. Your trees do not start to grow early in the spring. If you will take a thermometer and test the soil two and three feet below you will find that the soil temperature will average ten or fifteen degrees lower than it will in the Wenatchee or Yakima country; that is, so far as my experience goes. I have tested the soil somewhat and the temperature was lower. And you do not get an early growth, and you do not get a growth through the season on some varieties as you would in the lower sections. The soil temperature has a good deal to do with it. Stevens County is a section of country where springs abound, cold springs, and they seep out along those bottom lands of the Columbia, and you will find ten or fifteen degrees, and maybe more, in that sub-soil temperature up there than you will in the Wenatchee and Yakima countries.

Another gentleman: Will you mention the varieties that will be suitable for those upper countries?

Mr. Huntley: Well, you grow a splendid Yellow Newtown. You grow a good Spitzenberg; you can grow a good Rome Beauty. You grow a better Yellow Newtown than you will in the warmer soil. I believe I would plant the Arkansas Black and I would grow a Jonathan. I do not believe I would plant very many Winesaps.

The gentleman: How about the Wagener?

Mr. Huntley: The Wagener would be all right up there.

Another gentleman: Is the Banana growing in favor?

Mr. Huntley: The Winter Banana is liked by some people, but it has not come to be a standard variety. It is not a high quality apple and I do not think the color suits. I do not believe the color appeals to most apple users. In some way or other the Winter Banana, while it is a very good apple, does not find a place in the market equal to some of our other varieties. You either want a yellow apple or you want a red apple. You do not want a cross between the two. The old Maiden Blush almost went out of existence as a commercial apple, largely, I think, because of its color.

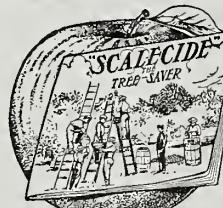
The first gentleman who spoke: Don't you think the conditions of grow-

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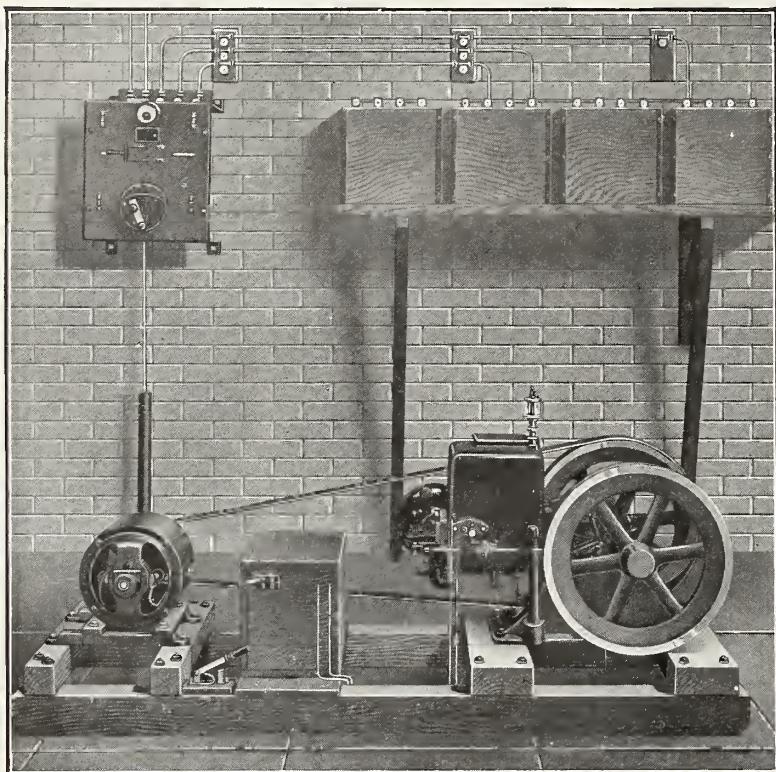
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ing apples in different localities depends upon the altitude as to the kind of apples you should grow?

Mr. Huntley: Yes, that has a good deal to do with it.

The gentleman: In the Wenatchee Valley we have a location of six hundred to fifteen or sixteen hundred feet for growing nice apples, but we have found the Winesap and other varieties do not do as well in that altitude at sixteen hundred as they do down in the lower altitude, and you find that Stayman Winesaps and the Delicious do better in a little higher altitude.

Mr. Huntley: The variation of altitude in a particular locality will make a difference. But on the other hand, in an altitude of twelve hundred to fifteen hundred feet in the Yakima country, those altitudes would not compare with your altitudes at Wenatchee, where your normal altitude is about six hundred feet, with the altitudes that are fifteen hundred feet around Wenatchee. You do not have the same conditions. You are nearer the mountains there at Wenatchee too.

Bulletin Reviews

Continued from last issue

The United States Department of Agriculture, Bureau of Plant Industry, has recently issued Circular No. 112. This contains a number of miscellaneous papers, among which is one entitled “The Jonathan Fruit-Spot,” by W. M. Scott and J. W. Roberts. This treats in detail what is called a new fruit spot of the apple. The spot which the bulletin treats of is seldom over skin deep, but detracts greatly from the appearance of the apple and affords a place of entrance for decay fungi. The disease occurs only on fully matured fruits and usually develops after the crop is picked. If left on the trees long after maturing the fruit of susceptible varieties may become affected before being picked. The authors state that the disease has been especially annoying to fruitgrowers who have attempted to keep prize specimens of Jonathans in storage for exhibition purposes. The growers of Spitzenberg apples in Oregon and Washington have perhaps suffered most from this trouble, the spots often developing on the fruit en route to Eastern markets. In conclusion the authors state: First, that the Jonathan fruit-spot of the apple is due neither to spraying with arsenate of lead nor to a specific organism; second, that it is probably a physiologic trouble, falling in the same category as the bitter pit or Baldwin spot; third, that early picking, prompt cold storage and immediate consumption of the fruit after removal from storage will largely obviate losses from the disease.

Those fruitgrowers who live in regions where natural ice occurs and who are planning to gather this ice for cold storage purposes will be very much interested in a bulletin recently published by the Ontario Department of Agriculture, Toronto, Ontario. This is

known as Bulletin No. 207. It is entitled "Ice Cold Storage on the Farm—Its Value and How to Provide It." The bulletin takes up a discussion of what cold storage means, its value, reasons why farmers should use cold storage, some properties of ice, its refrigerating power; gives suggestions as to types of buildings to build and systems of operating ice houses and refrigerating rooms. The bulletin gives tables in the back on the cold storage and freezing temperatures of the most common products of storage, including such fruits as apples, pears, canned fruits, ciders, dried fruits, nuts, peaches, plums, berries, etc.

The United States Department of Agriculture has recently issued Farmers' Bulletin No. 521. This is entitled "Canning Tomatoes at Home and in Club Work." Part I deals with canned tomatoes, catsup, chow-chow, etc. Part II deals with the canning of tomatoes in clubs and for market. This bulletin will be valuable to the housewife on one hand and on the other hand it will be of interest to communities that are contemplating the canning of tomatoes on rather a small but commercial scale. The first part treats of the canning of tomatoes in glass jars, using the open-kettle method. It also speaks of the closed-boiler method; how to can tomatoes thick, how to can them whole and how to sterilize thoroughly. It gives an excellent list of recipes for tomato catsup, Chile sauce, chow-chow,

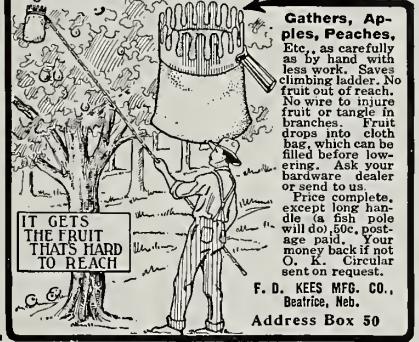
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tomato relish, chopped pickle, green tomato pickle, tomato sweet pickle, piccalilli, preserved tomatoes and tomato mince meat. Part II illustrates various portable home-canning outfits; tells how to use these different pieces of apparatus, gives a definite program for canning tomatoes at home and defines canning terms; also gives a few essentials in successful canning and suggestions for home and club canning. It gives a number of very useful tables, containing such information as the following: One bushel of tomatoes will fill eighteen No. 3 cans, one bushel of tomatoes will fill twenty-four No. 2 cans, the cost of various sizes of cans, the cost of labels, etc. Directions are given for the manufacture of brines, for processing, for syrups. A discussion is given on the possibilities of

the canning work. Examples are given of success in various parts of the United States in club canning. Hints are given on the grading and crating of canned tomatoes, on the judging and on finding a market. The bulletin concludes with a financial statement of what has been accomplished by certain communities.

The Oregon Agricultural College has recently issued a bulletin entitled "The Business Side of Farming, Part II: Practical Problems in Rural Economics," by Hector MacPherson. This bulletin should be of considerable interest to our fruitgrowers. It contains four chapters: Chapter 1, Economic Problems of Agricultural Production; chapter 2, Marketing Farm Products; chapter 3, Agricultural Co-operation of Organized Marketing; chapter 4, The

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Purchase of Farm Supplies. In dealing with the marketing of farm products some attention is given to fruit, especially apples.

A recent publication of great interest to Northwest fruitgrowers is the Biennial Crop Pest and Horticultural Report of the Oregon Agricultural College and Experiment Station. This bulletin includes investigations that were conducted with funds appropriated by the state by the former legislative assembly. The bulletin has only a limited edition and will be mailed on request to citizens of Oregon as long as the copies last. Very few copies can be sent outside of the state. The bulletin is divided into three sections: 1. Report of the Division of Horticulture. 2. Report of the Department of Entomology. 3. Report of the Department of Botany and Plant Pathology. The bulletin contains 317 pages and is splendidly illustrated, containing among others four full-page colored illustrations; these being reproduced plates made by color photography process. One colored plate deals with the striping and banding of apples. Two plates deal with aphis and a fourth with the San Jose scale on pears. The report of the Division of Horticulture includes a prune survey of Oregon. This survey is written as the result of the inspection of seven hundred prune orchards in eleven counties in different parts of the state. A report is given of frost investigation work in 1912. Investigations were conducted in the Umpqua Valley in prune orchards. Tables are given dealing with such subjects as the burning time for a measured gallon of oil, temperatures when burning a measured gallon, tests with various numbers of pots to the acre, the burning time of heaters filled to capacity. A chapter is devoted to seedless and malformed fruits. This deals principally with fruits which have been injured by frost. A chapter of especial interest to greenhouse men is that on greenhouse tomato investigations. A chapter that will be welcomed by a great many prune growers of the state is one entitled "The Drying of Prunes." This chapter goes very thoroughly into this work, dealing with the dipping, bleaching and drying of prunes. A discussion is given of the different types of dryers, with the average cost of drying and the various systems. One chapter is devoted to the loganberry in Oregon. It takes up important phases of the work, such as the botany, cultural range, development of the industry, sites and soils, propagation, planting, tillage, useful cover crops, fertilizers, irrigation, trellising and pruning, age of bearing and duration of plantation, intercropping, yields, markets and prices, insects and diseases. The horticultural section closes with a chapter on bud variation in relation to fruit markings. The true cause for the abnormal striping and banding of fruit, apples and pears, is given in this chapter. The Department of Entomology has treated fully such insects as woolly aphis, fruit tree leaf

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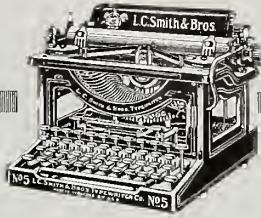
beetle, the bud moth, the cherry fruit fly maggot, the strawberry fruit miner, the garden slug and root maggots, currant fruit fly, cucumber beetles, onion thrips, vetch and pea aphis, clover and alfalfa insects. The report of the Department of Botany and Plant Pathology is divided into three parts: First, apple tree anthracnose; second, cherry gummosis; third, some important plant diseases of Oregon. The first two papers deal with special investigations that have been made at this institution. The chapter on cherry gummosis throws a great deal of new light on this disease. Under the chapter on "Some Important Plant Diseases of Oregon" such subjects as crown gall, mushroom root rot, diseases of pomaceous fruits, such as fire blight, fruit pit, powdery mildew, scab, etc., are treated. Considerable attention is given to diseases of drupaceous fruits, such as the brown rot of prunes and cherries, peach leaf curl, California peach blight. Some attention is paid to diseases of nuts, to diseases of small fruits and grapes, vegetable gardening crops and field crops. This report will be a very valuable addition to the horticultural library.

Home Manufacture of Vinegar

In response to numerous inquiries regarding the various processes involved in the home manufacture of vinegar and the precautions which should be taken in order to secure good results, Professor C. I. Lewis of the horticultural department of the Oregon Agricultural College at Corvallis has issued the following statement for the assistance of all those desiring to make vinegar on their own farms: There are three distinct steps involved, (1) apple juice sugar, (2) alcohol and (3) acetic acid. The amount of apple juice and quality depend on the grade of the apples, their ripeness, variety and freedom from dirt. To make good cider vinegar ripe apples which are free from filth should be used, and the juice should be put into good, clean barrels.

In grinding and pressing the apples, care should be taken to observe the ordinary precautions for cleanliness. In some cases water should be added to the apple pumace after pressing and then, after it has been allowed to stand a while, pressed again. In this way an additional amount of juice is obtained. This, however, does not contain enough sugar to make good vinegar. If high-grade vinegar is desired, the pumace should not be washed.

Where it is possible to do so the juice should be put into one large vat or covered receptacle and allowed to stand a few days before putting it into barrels. In this way the solid matter will settle gradually before it is placed in the casks. The casks should be thoroughly cleaned, treated with live steam or boiling water, to be certain that there is no foreign matter in them. Barrels should not be filled over two-thirds full of juice and the bungs should be left out. A loose plug of cotton may be placed over the hole, how-



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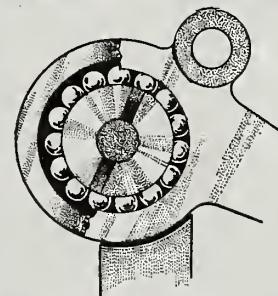
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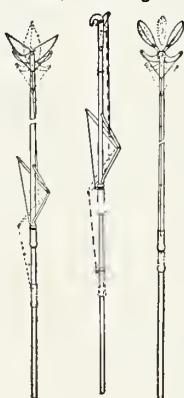
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If not, get the Picker that will save it—Bastian's—the only one that picks as well as by hand.

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ever, to decrease evaporation and prevent dirt getting in. The bung should never be put in until after the vinegar is made.

After the juice is placed in the cellar the temperature should not be allowed to fall below 44 to 50 degrees Fahrenheit. The alcoholic fermentation will be complete in three to six months' time. By raising the temperature the fermentation may be made more rapid, but it should not be pushed over 75 degrees. By adding yeast fermenta-

tion can be completed in three months' time, or even less. It takes one yeast cake to about every five gallons of apple juice. The yeast cake should be absolutely fresh and should be dissolved in warm water before putting it into the juice. Vinegar, or "mother," should never be added to fresh apple juice, or until after the cider has become hard.

After thorough alcoholic fermentation has taken place and the cider has become hard, the clear liquid can then

be drawn off, and after the cask has been thoroughly rinsed the liquid can be returned to it. After filling the barrel about half full of the clear liquid one-fourth of the old vinegar may be added, and on the surface of it some "mother" may be added if desired.

It requires from three to eighteen months or more to make good vinegar, according to the conditions under which the fermentation is carried on. When the apple juice is stored in a cellar and allowed to become vinegar of legal standard, it takes from twenty-one to twenty-four months. If the alcoholic fermentation is hastened by the use of yeast and the acetic fermentation favored by a warmer temperature and a vinegar "starter" added, it is possible to make good vinegar in from six to twelve months. When the acetic fermentation will produce about 4.5 or 5 per cent of acetic acid, then the barrels can be filled to their capacity and tightly corked. In manufacturing plants they use "mother" or thick, tough, yellowish skin which forms in the vinegar barrel, and after adding it to the apple juice let it drip over beech shavings, coming in contact with warm air in the process, which produces the vinegar much more rapidly.

Among the Canneries

The Puyallup Fruitgrowers' Association, of which Mr. W. H. Paulhamus has long been manager, has met with such splendid success in the canning business that they have established a regular demand and trade for their entire output of canned raspberries and blackberries. The crop bids fair to be an excellent one this year. Already the association has placed orders for one and one-half million cans.

* * *

The Sunnyside cannery, operating in Yakima Valley, it is reported, will be operated on a co-operative basis. It has been announced that their operations will be far more extensive in the future than in the past and that neces-

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Write for furnace catalogue, and in about one month I will have a catalogue out on evaporation of apples, selling, buying, packing, curing and, in fact, everything you wish to know.

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FRUIT Western Soft Pine
Light, strong and durable

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TWO CARLOADS DAILY

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Vegetable Crates and Fruit Boxes of All Kinds

Washington Mill Co.
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sary machinery equipment will be added for putting out first-class product of the different kinds of fruits during the season of 1913. During the season of 1912 the cannery packed over 51,000 pounds of pears, 695,000 pounds of tomatoes, 45,000 pounds of pumpkins and 65,000 pounds of apples.

The Sprague Sanitary Preserving Company of Lewiston-Clarkson district during the season of 1912 manufactured over 30,000 cases, or one million quarts of fruits and vegetables. The canned fruit shipment reached sixty-five cars.

The co-operative cannery at Eugene, under the management of Mr. J. O. Holt, met with wonderful success in 1912. This cannery and the one at Corvallis are being conducted along co-operative lines and controlled by the growers, being run for the benefit of the growers. Both these canneries are doing some great educational work as well as splendid commercial work. They are endeavoring to solve for the fruitgrowers the problems of diversified products and endeavoring to secure a proper acreage of the different kinds of fruits and vegetables so as to keep the cannery properly supplied from the beginning of the season until the end. Both of these institutions are exceedingly popular with the growers and are meeting with splendid success from every point of view.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

[Advertisement]

Good Roads

Hon. Jonathan Bourne, Jr., chairman of the joint committee on federal aid in the construction of post roads, gave out the following interview on June 9, 1913: "With city population increasing three times as fast as rural population, and production of foodstuffs not near keeping pace with increases in population, there is surely need to make farm life more attractive. The problem is one of national importance, for congestion of population in cities is a national evil. Upon country life we depend chiefly for the strength and vigor of body, mind and moral character that make a nation great. To halt the drift of men and women toward the city, we must make farm life more pleasant and farm operation more profitable. No public undertaking will aid more in this direction than improvement of highways, for good roads destroy the isolation of country life, improve market opportunities and decrease the cost of hauling farm produce to town. To meet the situation I have

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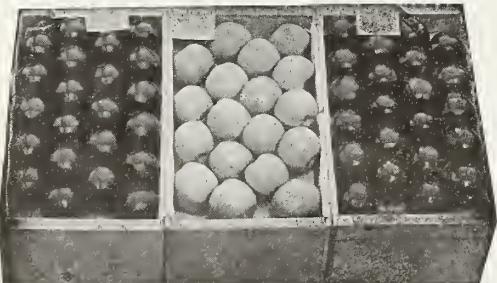
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can farms. Even with continuation of animal power it would reduce our present 'mud tax' one hundred millions annually. Third, furnish occupation for 400,000 people in maintaining the highways, except during the harvest season, when they would be free to work on farms during the busy season. A road well maintained until that time needs no care during the harvest period. Any person interested in the subject of good roads can secure a copy of my suggested plan by writing me, care of the Senate Office Building, Washington, D. C."

Editor Better Fruit:

I have always enjoyed your paper very much and do not hesitate to recommend our fruit growers to keep in touch with the fruit business of the country through your paper. Yours truly, E. R. Bennett, Little Rock, Arkansas.



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